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NOVEMBER 22, 1929.

SIXPENCE WEEKLY.

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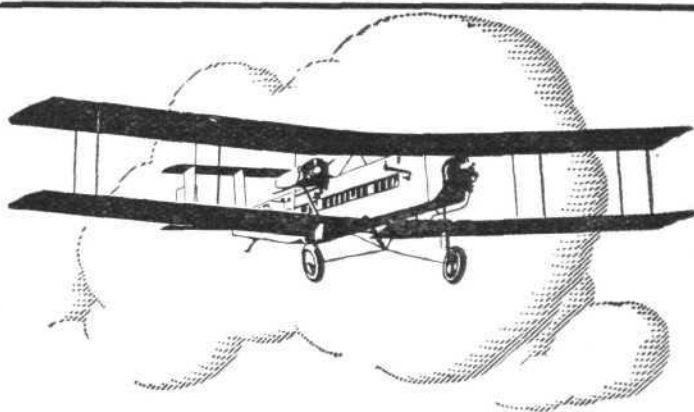
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A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

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## DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

1929.

Nov. 28 .... "Flying and Maintenance from the Owner's Point of View," Lecture by Sq.-Ldr. H. M. Probyn, before R.Ae.S. and Inst. Ae.E.

Dec. 5 .... "Recent Work on the Autogiro," Lecture by Senr. J. de la Cierva, before R.Ae.S. and Inst. Ae.E.

Dec. 6 ... No. 3 Sqdn. R.F.C. and No. 3 (F) Sqdn. R.A.F. Reunion Dinner, Hotel Cecil.

Dec. 12 .... "The Development of Materials for Aircraft Purposes," Lecture by Dr. W. Rosenhain before R.Ae.S. and Inst. Ae.E.

1930

Jan. 22 .... "The Strategical Mobility of Air Forces," Lecture, by Gp.-Capt. C. L. Courtney, before Royal United Service Inst.

Sept. 6-28 .... Aero Exhibition, Stockholm, Sweden.

## EDITORIAL COMMENT



### A Promising Beginning

ALTHOUGH much still remains to be done, the experience so far gained with the new airship R.101 must be regarded as being satisfactory, and as promising well for the future. As we have in the past pointed out, this airship represents so great a departure from previous practice in the matter of construction, that the *technical* aspect is of far more immediate interest than is the ultimate *commercial* value of the present airship. Certainly, it must be admitted that unless there is reasonable prospect of airship services some day becoming useful commercial propositions, the solution of technical problems must be largely a matter of academic interest. But, conversely, unless the technical difficulties can be overcome, the actual operation cannot be undertaken, and, therefore, the engineering side must of necessity take priority, at the present stage of development, over commercial considerations.

During the last few weeks a number of tests have been carried out with R.101, and it is gratifying to be able to place on record the fact that, as far as they have gone, they have been successful and have proved the designers' calculations and assumptions correct. The construction of R.101 has taken a long time. Many think too long. But it was desired to take no avoidable risk and, therefore, whenever a doubt existed, experiments were carried out before the actual work on the part or feature of the airship involved was continued. The designers have had to put up with a good deal of adverse criticism, much of it of a hostile and far from constructive kind, but they have had the good sense to remain unperturbed and to "carry on" with their work, letting results speak for themselves.

To begin with, the airship has now been in the air and has carried out flights with very nearly the full designed load. From the technical viewpoint it matters little how this load was composed, so long as it was lifted. The heavy engines and the use of one out of five for reverse propulsion has reduced

the pay load, but as regards the stresses in the structure, this is unimportant. That it does matter a very great deal to the commercial aspect is granted, but the advantages of heavy-oil compression-ignition engines were regarded as being so great that the installation of engines of this type was chosen, the designers knowing full well that in so doing they were losing a great deal of pay load which would have "looked well on paper." But the use of petrol engines would not have advanced our knowledge to any important extent, while the installation and running of heavy-oil engines has taught us a good deal already and will teach us more when longer cruises can be undertaken. Already the heavy-oil principle appears to have achieved what was expected of it, the main exception so far being the question of reliability, which will be ascertained as soon as longer flights are made. The heavy engine weight was the price paid for this knowledge, and those who should know assure us that it is merely a question of time and development to reduce the weight very materially.

Certain airship critics have made much of the mooring difficulties, and have even predicted that if an airship at the mast were caught in a strong wind and this wind, as sometimes happens, changed direction suddenly, the airship would probably suffer severe damage. On November 11 the wind at Cardington reached gale force, gusts of 80 m.p.h. or more occurring. On one occasion the wind veered through an angle of about 135 degrees in a period of one minute. This condition was easily met by the airship, and the stress-recording apparatus indicated that there was an ample margin of safety before stresses of a dangerous magnitude were reached.

On Sunday and Monday last, November 17 and 18, R.101 carried out an extensive cruise, remaining aloft for 30½ hours, covering a distance of more than 1,000 miles, and carrying out turning tests at various speeds. On this cruise the airship had on board 54 persons all told, comprising 8 official observers, 4 officers and 42 men. At the end of the flight there was enough fuel left for at least another 35 hours. It is gathered that the engine installation functioned entirely satisfactorily, so that the minor trouble encountered on an earlier flight, when bends in some pipes fractured, have evidently been entirely overcome. During this flight the airship encountered very varied weather, including fog, but in spite of the latter, she was brought to the mooring mast and made fast quite successfully in the dark. This provided a useful experience in mooring under unfavourable conditions.

During the cruise, turning trials were carried out at various speeds, and gave, it is understood, satisfactory results. This statement will probably convey very little to the average non-technical reader. It might, therefore, be pointed out that it was as a result of precisely such turning tests that R.38 broke up, due to the lack of knowledge then available concerning the loads that such manoeuvres might throw on the structure. Much work has since been done on this subject, and the tests with R.101 indicate that her strength is up to calculations. Among the remaining tests to be made, an opportunity may occur to test the strength in a strong vertical current when the airship flies towards the east at a later date. If the airship can be proved strong enough for these, there is little that wind and weather can do to damage her. A thick covering of snow is always to be feared,

as it results in loss of buoyancy, but it should not seriously stress the structure.

Altogether, it can now be claimed that the technical tests have proved the new form of construction to stand up to its work in the matter of strength. There still remains, on the technical side, to find out how the durability compares with the Zeppelin type, but there is reason to believe that in this respect R.101 will be, if anything, superior to the older form.

R.101 has made a good start, and Col. Richmond and Major Scott and all those associated with them in the work of producing R.101 are to be congratulated on the results of their long and arduous task. The future may still have set-backs in store for us, but in the meantime a very good beginning has been made.

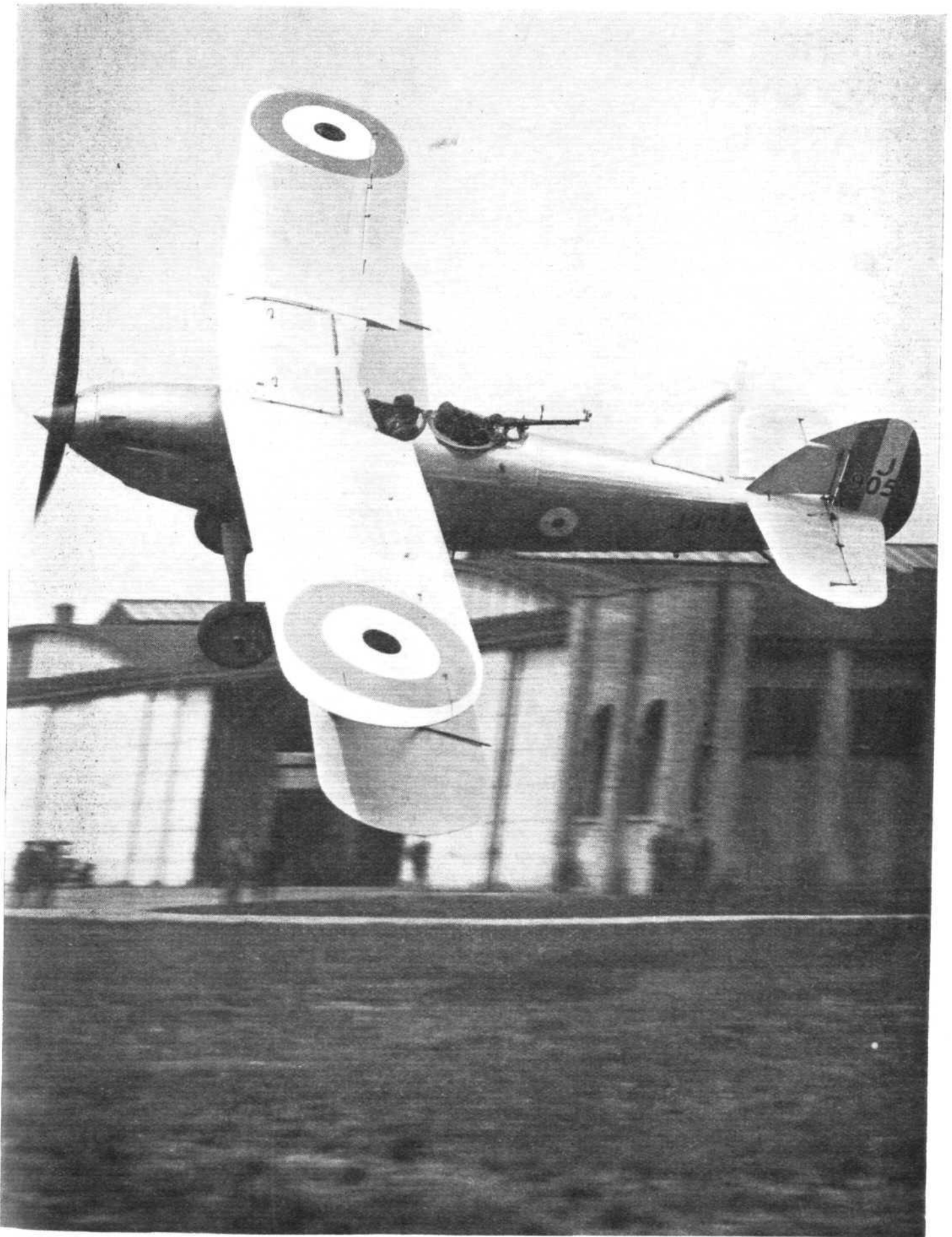
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In last week's issue we published on this page a photograph of the latest Junkers monoplane, the type G.38, which has recently undergone its first test flights. At a time when very large heavier-than-air craft are being produced by

#### The Age of Large Aircraft

several constructors, mainly abroad, the subject of the large machine is of more than passing interest. To us, it has always appeared that sight is apt to be lost of the fact that there is no particular virtue in size as such, except possibly in the case of the large flying-boat, in which, other things being equal, the large machine may be assumed to be more seaworthy than the small. Other than that, it seems to us that the large machine is not worth while unless it can be shown to have either a higher performance or a better pay load for each horse power expended. The Junkers G.38, however, appears to be something rather more than a mere experiment in size. It has long been the ambition of Professor Junkers to realise a machine which he terms a "Nur-Flügel Flugzeug" (*i.e.*, a "wing-only" aeroplane), because, if all external organs except the wing itself could be suppressed, the ratio of lift to drag would be improved a good deal. In the G.38, Professor Junkers has not quite attained his ideal, but he has succeeded in making the fuselage small in proportion to the wing, and in burying the four engines inside the wing. Part of the passengers' quarters are located inside the wing roots, and to some extent realise the old Junkers' patent. The engines are entirely housed in the wing, and in order to get the propellers well clear of the leading edge, special extensions of the propeller shafts have been employed, in which we gather some form of spring coupling is incorporated. Fairings or cowlings over these shafts provide a smooth streamline flow from propellers to wing.

These are the main innovations in the Junkers' G.38, and it is of considerable interest to learn that the detail design and general lay-out of the machine is such that the designers have been able to cheat the "scale law" to a considerable extent while doubtless getting good aerodynamic efficiency. We are informed by the Junkers works that the tare weight of the G.38 is 13 metric tons (28,600 lbs.), and that the permissible gross weight is 20 to 24.1 metric tons (44,000 to 53,000 lbs.). Presumably, the higher figure represents an overload such as might be incurred in a very long non-stop flight. But even taking the lower figure, one obtains a disposable load of 15,400 lbs. To attain such a ratio in so large a machine is no mean achievement.

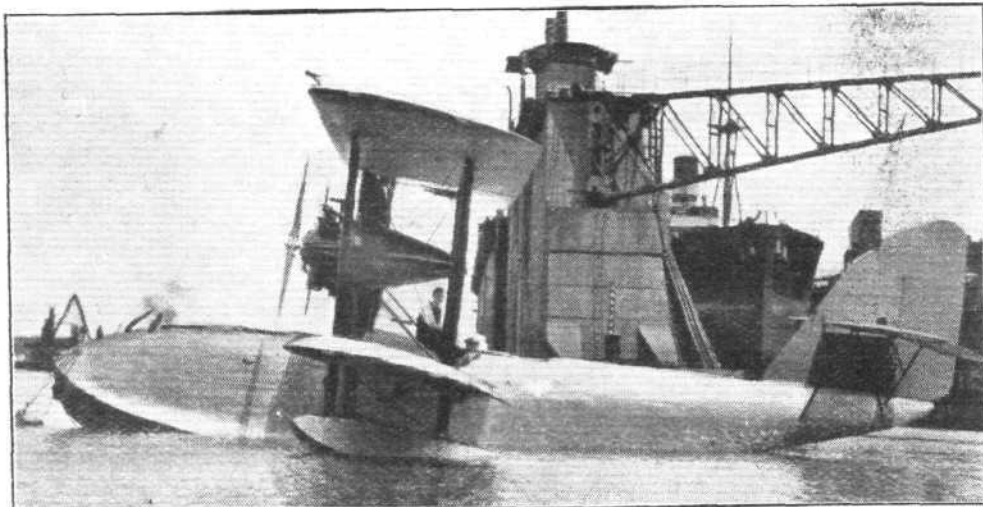


**A RECONNAISSANCE FLEET FIGHTER:** Extremely clean lines characterise the Hawker "Hart." Note the careful cowling of the Rolls-Royce "F" type engine and the sheltered position of the rear gunner. (FLIGHT Photo.)



# THE VANCOUVER MARK I

A Canadian-Vickers  
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**T**HE Vancouver is a twin-engine flying-boat fitted with Armstrong Siddeley Lynx Mark IV direct-drive engines. It was designed by Canadian Vickers, Ltd., to a specification prepared by the R.C.A.F. and for use in connection with the suppression of forest fires, its duties being to transport men and fire-fighting equipment to fires reported by regular aerial fire patrols.

Low landing speed, quick take-off, and high initial rate of climb are essentials for this type of work, as the only available landing places adjacent to or actually in the forests are small lakes, surrounded generally by thickly timbered hills. The Vancouver has been designed with these three primary considerations in view.

The hull is entirely of duralumin, the construction being of the longitudinal type. The skin is supported internally by frames and a series of longitudinal stringers, these latter being continuous through all frames and bulkheads. There are three watertight bulkheads, extending the full depth of the hull, which divide the hull into four watertight compartments. A feature of the construction is that all sections are of the open type, thus facilitating inspection and preventing moisture from collecting in crevices. There are two cockpits and three hatches. The pilots' cockpits are forward of the wings and in tandem, giving excellent view and permitting a clear walkway inside, so that all parts of the hull are accessible without interfering in any way with the pilots. The mooring hatch is in the nose and is furnished with every convenience for the stowing and handling of towing and mooring gear. The main cabin is immediately aft of the cockpits, and is separated from the internal walkway by a water-tight bulkhead in which is fitted a water-tight door. To help the loading of freight, the front cockpit is extended transversely, the extended opening being fitted with a hatch.

The normal entrance to the main cabin is through a large quickly detachable hatch in the top of the hull. Collapsible seats are provided for six passengers, and there is sufficient room to stow a large quantity of equipment even when all seats are occupied. Aft of the main cabin, provision is made for stowing a collapsible canoe, and a hatch is provided to give access to this rear compartment.

The interior of the hull has been kept very clear of obstruction so that quick loading and unloading is possible.

The wings are arranged in the conventional biplane manner,

the section used being Clark Y. Construction is of the normal two-spar type, spars and ribs being of spruce, and the internal bracing of duralumin struts and steel tie rods. The external bracing is of steel tubes and streamline wires.

The engines are mounted as tractors in the wings on welded steel-tube nacelles, which also carry the oil tanks. No torque struts are fitted, all engine torque being taken by the front engine mounting interplane struts. Fricable ailerons are fitted to the bottom wings only.

All fuel is carried in the wings. Two main tanks with a total capacity of 110 Imperial gallons are carried in the top centre section, and the feed is by gravity direct to the engines. Either engine can be supplied from either or both main tanks.

Two reserve tanks with a total capacity of 50 Imperial gallons are fitted in the bottom centre section. The reserve fuel is pumped by hand when required, to the main tanks.

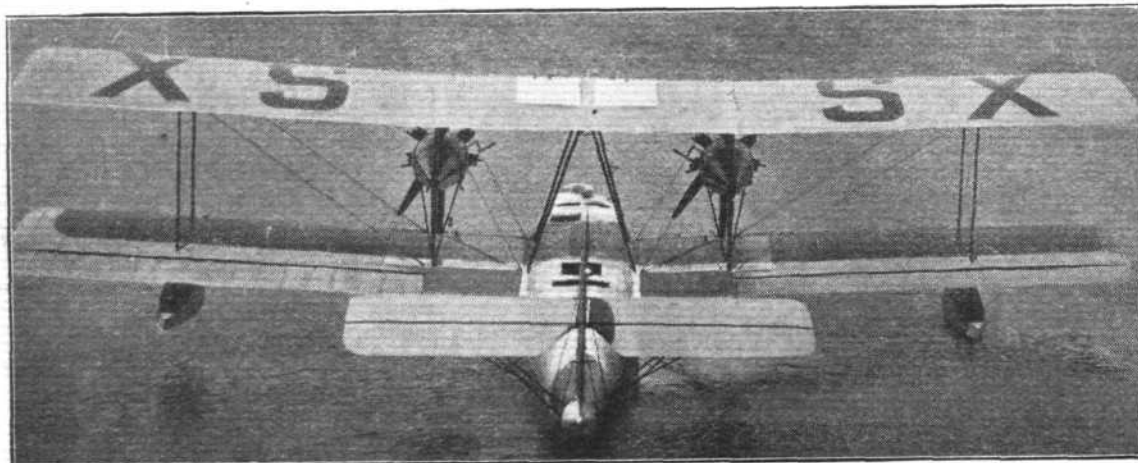
The complete tail unit is built up of welded steel tubes, and the tail plane is adjustable in flight from the pilot's cockpits.

The controls are dual-wheel type, and one set can be quickly detached. Two-bladed standard steel airscrews are fitted.

A novel beaching gear has been designed for use with this machine. This gear is so arranged that it can be readily attached by the crew while the machine is on the water. The tail support consists of a pneumatic wheel which, by an ingenious arrangement, can be attached and locked from the deck, in the bottom of the hull just aft of the rear step. The machine can then be beached without outside assistance.

The principal characteristics of the Vancouver with D.D. Lynx Mark IV engines are: span, 55 ft.; length, 37 ft. 6 in.; height, 15 ft. 8 in.; wing area, 772 sq. ft.; weight empty (including all equipment), 4,300 lbs.; allowable all up weight with I.C.A.N. factors, 6,310 lbs.; fuel and payload, 2,010 lbs.; top speed, 101 m.p.h.; cruising speed, 90 m.p.h.; rate of climb at G.L., 650 ft. per minute; service ceiling, 12,500 ft.; landing speed, 45 m.p.h.; range at cruising speed with normal fuel, 400 miles; time to get off water, 10 secs.

The machine is now going into production fitted with either geared Lynx or Wright J.6 300-h.p. engines, when the allowable all up weight will be increased to 7,000 lbs. without overload. The design factors will be still I.C.A.N., and a considerable increase in performance is expected.



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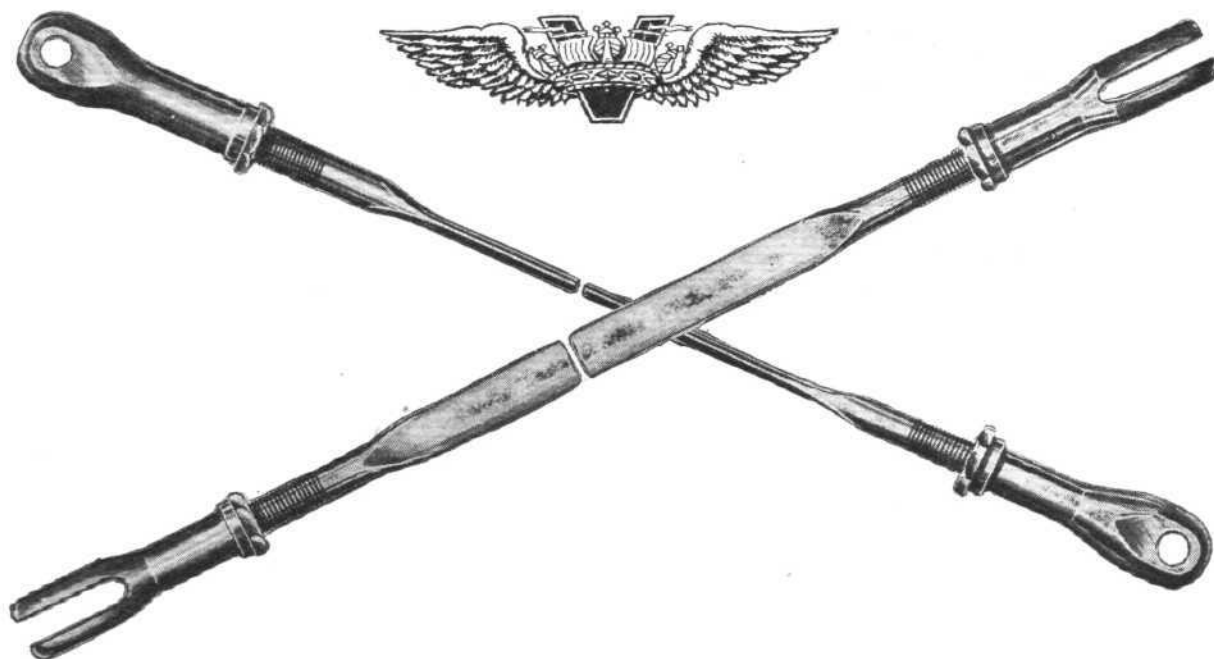
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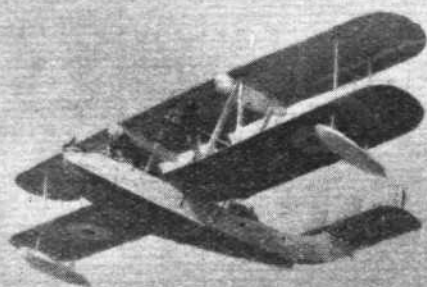


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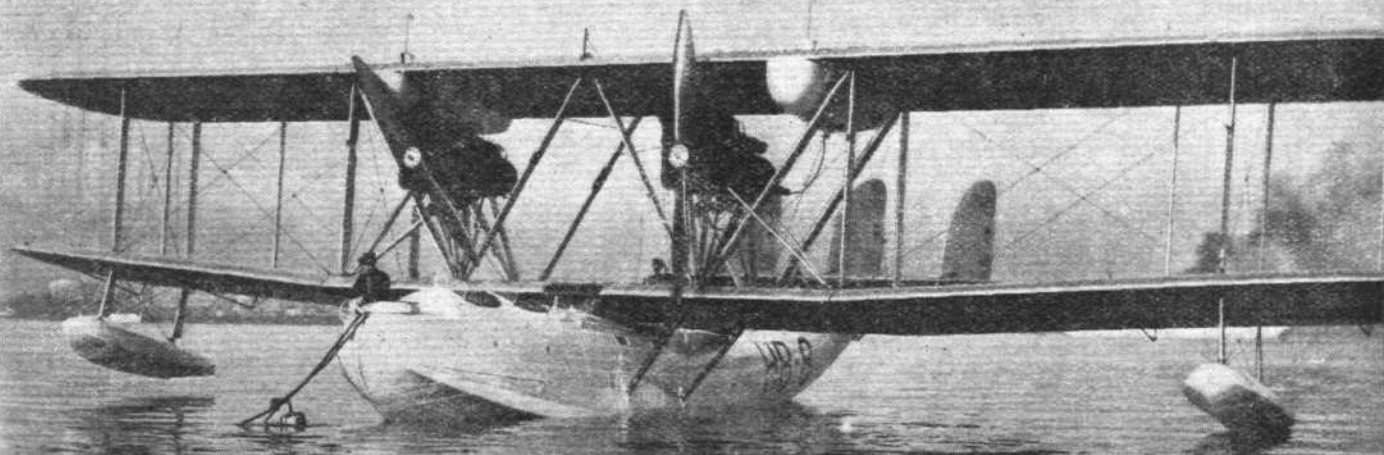
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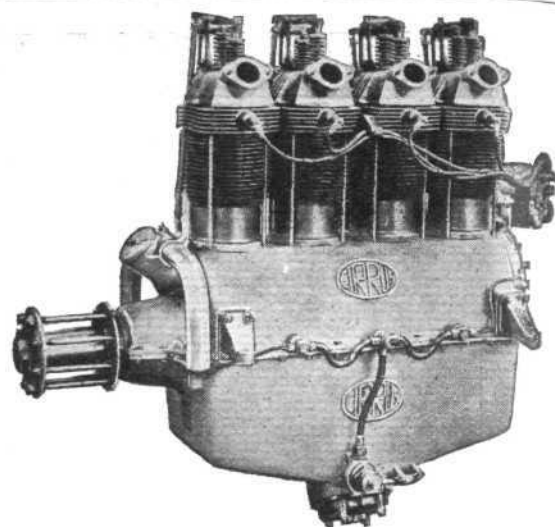
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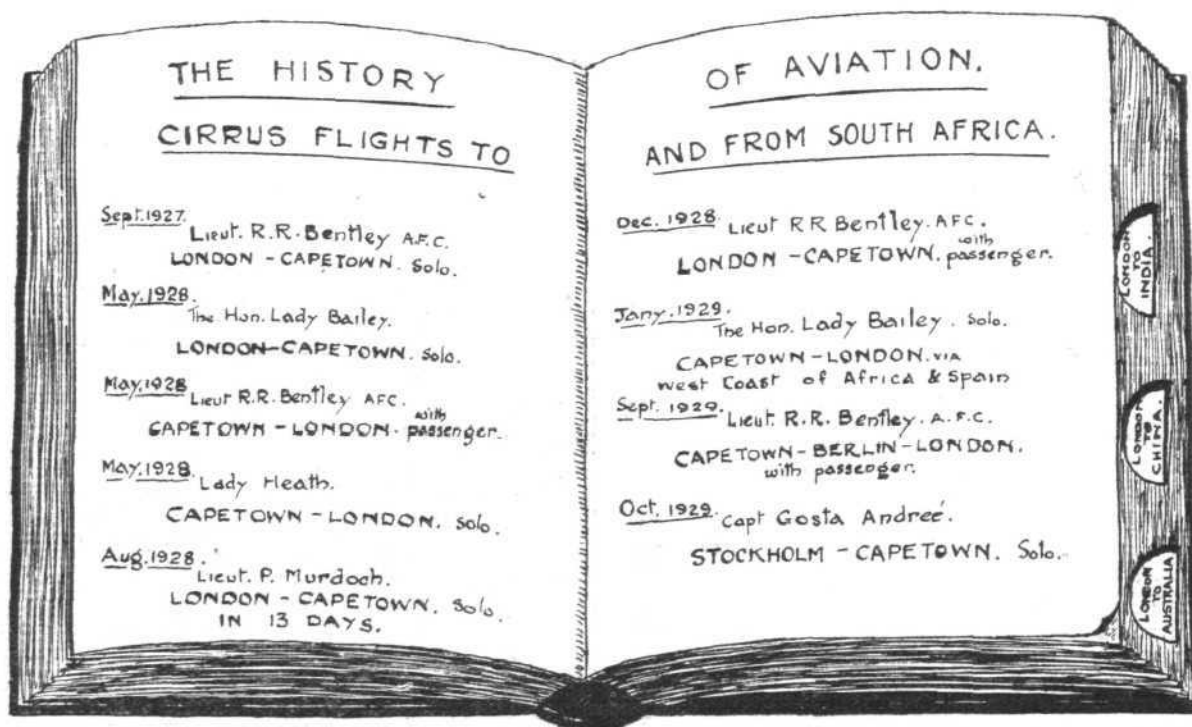
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## AN INFORMAL DISCUSSION ON THE SCHNEIDER AND HIGH-SPEED RECORD RULES

**T**HE Royal Aeronautical Society held an informal dinner and discussion at St. Ermin's Hotel, Westminster, on Friday, November 15.

Col. The Master of Sempill was in the chair, and after dinner Major J. S. Buchanan moved: "That this meeting is of the opinion the present rules for the Schneider Trophy Race and the High Speed Record are not consistent with the proper development of high speed aircraft."

Being an informal discussion it was particularly asked that the speeches should not be reported verbatim, nor should the remarks of the speakers be attributed directly to them. Therefore we can only indicate the way things went.

The motion was eventually lost by a vote of about 38 to 20, after a very varied expression of opinions. The chief changes which were suggested for the alteration of the Schneider rules were a limitation of engine power, an arrangement whereby the navigability trials and the race should be

combined by having to land after having flown half the course, so that the whole contest could be carried out in one day, a decrease in the starting intervals, so that public interest would be better catered for, and one speaker even went so far as to suggest that the race would be a better one if the machines had to be passenger ones. However, none of these ideas seemed to make the majority think that the rules could be bettered by their incorporation. As regards the High Speed Record the general opinion was apparently in favour of a change, but the direction in which this change should be made was obviously a matter for further discussion, the only really concrete suggestion was that, as it was agreed that the present method of allowing a certain amount of dive enabled a higher speed to be achieved than the real top speed of the machine, it would be better to have a five-kilometre stretch either end of the actual course which had to be flown at a certain height.

### THE SCHNEIDER TROPHY

By SQD.-LDR. A. H. ORLEBAR

**S**QD.-LDR. A. H. ORLEBAR, on Monday, October 18, in a lecture to the Oxford University Air Squadron, referring to what is known as "blackening out," explained that this occurred as a pilot made a sharp turn, when everything went black before his eyes. Medical opinion, he said, was divided as to whether this was caused by the centrifugal force of the turn acting vertically down the body and drawing the blood from an artery behind the eye, or whether the blood was drawn from the whole brain and the pilot gradually became unconscious, losing sight last of all.

Sqd.-Ldr. Orlebar said he believed the former explanation was correct. He had tried keeping the turn on the machine when one stayed "blackened out" till one had had enough of it, yet one was quite capable of coming out at any moment. They found, he said, that the best form of turn for the race was a vertical one with the stick pulled back, but not hard. They decided that it was best to get vertical as soon as possible, but not to prevent the machine climbing a little on the fuselage if it wanted to, since any correction would mean extra control drag, and they could always get some acceleration after the turn by losing height again. Apart from the turns, the Air Ministry discouraged all stunting because it was unnecessary. He said:—"I believe the highest load put on the machine in a turn was seven times the normal, but they (the seaplanes) were all 'stressed' for far more than that."

Explaining the seeming anomaly that all the members of the team were land pilots who had flown single-seater fighters, he said that the conditions for landing these machines on an aerodrome were more akin to those needed for putting down high-speed seaplanes on to the water than were the conditions under which seaplane pilots habitually landed heavy flying-boats. Further, they did not like being put down on the water until they had quite finished flying, and that was the very first thing a land pilot was taught to avoid, whilst the seaplane pilot, with a big space available and a clumsy machine, did not worry so much about this. The lecturer continued:—

"On my first trip I thought I was approaching quite slowly till I looked at my air speed to find I was doing 180 m.p.h. However, one has to approach at a fair speed; otherwise, the machine drops so rapidly and so far from the true angle of glide that it is hard to know when to flatten out. Having come near the water, she floats in the air rather a long way, but that gives time to adjust the height, and then it is only necessary to hold off and keep bringing the stick back till she will not stay in the air any longer, and sinks into the water quite nicely."

Later, returning to this question of landing-space, Sqd.-Ldr.

Orlebar said that once when an engine cut out as soon as one seaplane got 10 ft. into the air, the distance from the point at which she started the take-off run was three miles from the point where she pulled up. The racers in the air were beautiful to handle, and there was very little real sensation of speed, as one could not see vertically downwards owing to the bulge of the fuselage. The only idea of speed he had noticed was the way a headland seemed to approach, and widen out rapidly when the pilot flew towards it over open water.

The starting of practice for these land pilots on high-speed seaplanes was "taxi-ing" on the water, the most unpleasant part of all, as before the controls had become effective the seaplane threw up much water, which sometimes hit the propeller and was deposited as a shower bath over the back of the pilot's neck.

Sqd.-Ldr. Orlebar said they had hoped that each pilot would have been able to fly every machine in turn, but when this became impossible owing to lack of time it was settled that two should go for one type and two for the other. F./Os. Waghorn and Atcherley rather wanted the Supermarine Rolls-Royce machines; Flt.-Lt. Stainforth was keen on the Gloster-Napier; and Flt.-Lt. D'Arcy Greig was neutral. They decided, therefore, that the allocation should be as above, and that if the 1927 Supermarine racer flew in the race Flt.-Lt. D'Arcy Greig should have it.

On the maintenance of the practice racers of 1927, Sqd.-Ldr. Orlebar said that originally it was thought that the engine life between overhauls was as short as two hours, but finally they were allowed 15 hours of engine time, though they were lucky to get half that time in the air, as the rest was occupied in warming the engine up and in tests. The Gloster IV was looked upon as a trusted veteran when it was decided after 27 hours' flying, that she must be written off.

The lecturer added that the pilots kept fit by not hanging around more than was necessary when the weather was unfit, and by taking exercise without making a fetish of it. They knocked off alcohol, but as two were teetotalers and the other three were not keen on drink this entailed no hardship. Three were non-smokers. Flt.-Lt. D'Arcy Greig went on with his two or three cigarettes a day, and every now and then the lecturer reduced his allowance from 20 or more to not more than a dozen a day—a statement which upsets many versions of the hard training of the pilots that were current during the period before the race.

Finally Sqd.-Ldr. Orlebar paid tribute to the devoted work of the mechanics and A.I.D. officials, who kept going for three and four days and nights at a stretch with only an odd hour or so of sleep in order to get the machines tuned up for the race.

#### French Schneider Machine's High Speed

ONE of the French machines built for the Schneider Trophy, and scratched from the race through not being ready, attained a speed, it is reported, of 312 m.p.h., piloted by the French pilot Paillard, at Hourtin, near Bordeaux, on November 13.

#### A Rohrbach-Romar Damaged

ONE of the Rohrbach-Romar flying-boats ordered by the Deutsche Lufthansa for use on an eventual Transatlantic service to South America turned on her nose and was damaged while attempting to rise from Travemunde Harbour on November 18.



## BRITISH SALMSON AERO ENGINES

**A** NOTHER addition to the growing list of British-built motors for aerial work is the Canton-Unne, which did so well in the recent French War Office tests. This is now being manufactured over here by the Dudbridge Iron Works, Ltd., near Stroud. Six engines are being built by the firm in order to take part in the competition for aerial motors which will be conducted by the British War Office next February.

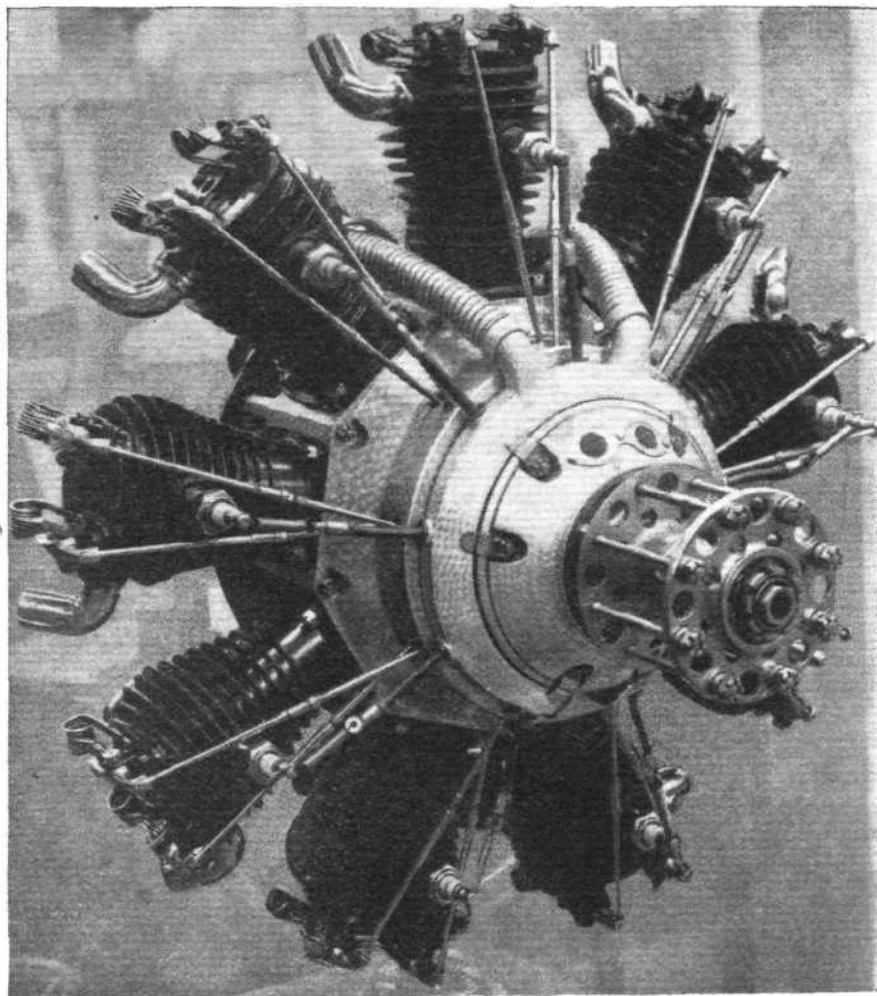
Above paragraph appeared in FLIGHT of September 6, 1913, and was the first announcement of the fact that this well-known French aero engine was about to be constructed in England. For the benefit of those of our readers (several thousands) who have become interested in aviation since 1913, it may be pointed out that the pre-war Canton-Unne engine was in fact the Salmson. Already in those days the Canton-Unne, or Salmson, was a radial aero engine, but with this difference that it was water-cooled. The French Salmson company has remained faithful to their original ideal, but have, of course, substituted air cooling for water cooling in the majority of their types. As regards the radial arrangement of the cylinders, however, the Salmson Company must be classed among the pioneers, and in these days of radial popularity it is only fair to give credit where credit is due and to recall that the radial aero engine was in existence and was giving good service as long ago as 1913.

It is an old saying that history repeats itself, and consequently it is scarcely surprising that once more arrangements have been made to manufacture the Salmson aero engines in Great Britain. This time it is not the Dudbridge Iron Works (indeed we do not know if that firm is still in existence), but a company specially formed for the manufacture of the Salmson engines in London, and to be known under the title British Salmson Aero Engines, Ltd. The new company is establishing works on the Kingston bypass road, and the moving spirits in it are Mr. F. W. Berwick, Mr. Armand Bovier and Messrs. Howard and David Martineau.

Mr. F. W. Berwick has had long experience of both motor-car and aircraft work, as he was the Berwick of the old Sizaire-Berwick Motor Car Company and, during the war, directed an aircraft factory. Since the war Mr. Berwick has been associated with Mr. Bovier in the British Salmson Motor Car Company, and they have now decided to establish a separate concern exclusively for the manufacture of Salmson aero engines. Temporarily, the address of the new firm is at Church Wharf, Chiswick Mall, London, W.4, to which address communications concerning Salmson aero engines should be sent, and from which information concerning these engines can be obtained. The telephone number is Chiswick 3531-3532.

British Salmson Aero Engines, Ltd., will ultimately produce all such Salmson types of engines as the market appears to justify. In the meantime a start will be made with the little 9-cylinder 40 h.p. type AD 9, which has proved so successful in France, and has been installed with excellent results in a number of foreign light 'planes. That Messrs. Berwick and Bovier are not playing with aero engine production will be realised when we point out that the plans for the immediate future include the building of a series of no less than 500 of the AD 9 engines. The question that will naturally be asked is what price the Salmson engine will be sold at in this country. In view of the fact that production has not yet started, it is obvious that an accurate estimate is difficult, not to say impossible, but we are informed that it is hoped to market the engine at a price of something like £175. This figure may appear somewhat high, as it works out at more than £4 per rated horse-power, but it should be borne in mind that the AD 9 is a 9-cylinder engine, and that extremely smooth running is attained

by dividing the relatively small power among so many cylinders. In other words, only some 5 b.h.p. is taken from each cylinder. As each cylinder has a swept volume of but 331 c.c., one may regard the AD 9 as the equivalent of nine small motor-cycle engines put together. A 'bike engine of 331 c.c. would probably cost about £20, so that the AD 9 if it is marketed at the figure now contemplated, will actually sell at a price which is comparable with the proportional price of a motor cycle engine. And as these are built in very large numbers, it would not appear that £175 for the AD 9 is at all a high price. This is not, perhaps, a very orthodox way of looking at the subject of price, but it does form a rough-and-ready basis of comparison.



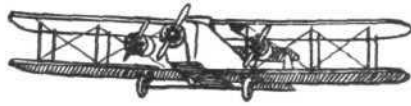
The Salmson AD 9 aero engine is to be built in London. This photograph shows the engine exhibited at Olympia, which had single ignition. The British engine will have dual ignition. (FLIGHT Photo.)

### TECHNICAL DETAILS

The Salmson AD 9 was illustrated and briefly described in the Aero Show issue of FLIGHT of July 25, 1929, but as so many engines had to be dealt with in that issue, there was not space for anything like a detailed description of each. As the AD 9 is likely to be used to a considerable extent in British light 'planes during the next few years, it is thought that some information concerning it will be of interest.

The main data relating to the Salmson AD 9 are as follows:—

- Type : 9-cylinder, radial, air-cooled.
  - Bore : 70 mm. (2 $\frac{3}{4}$  in.).
  - Stroke : 86 mm. (3 $\frac{3}{8}$  in.).
  - Swept volume : 2,980 c.c. (179.5 cub. in.).
  - Compression ratio : 5.6 to 1.
  - Nominal power : 40 b.h.p. at 2,000 r.p.m.
  - Average petrol consumption : 250 g. (0.55 lbs.) per hp.-hr.
  - Average oil consumption : 25 g. (0.05 lb.) per hp.-hr.
  - Weight with propeller hub : 70 kg. (154 lb.).
- The crankcase, of aluminium alloy, is of the split type, with a spigoted joint in a lateral plane around its circumference.



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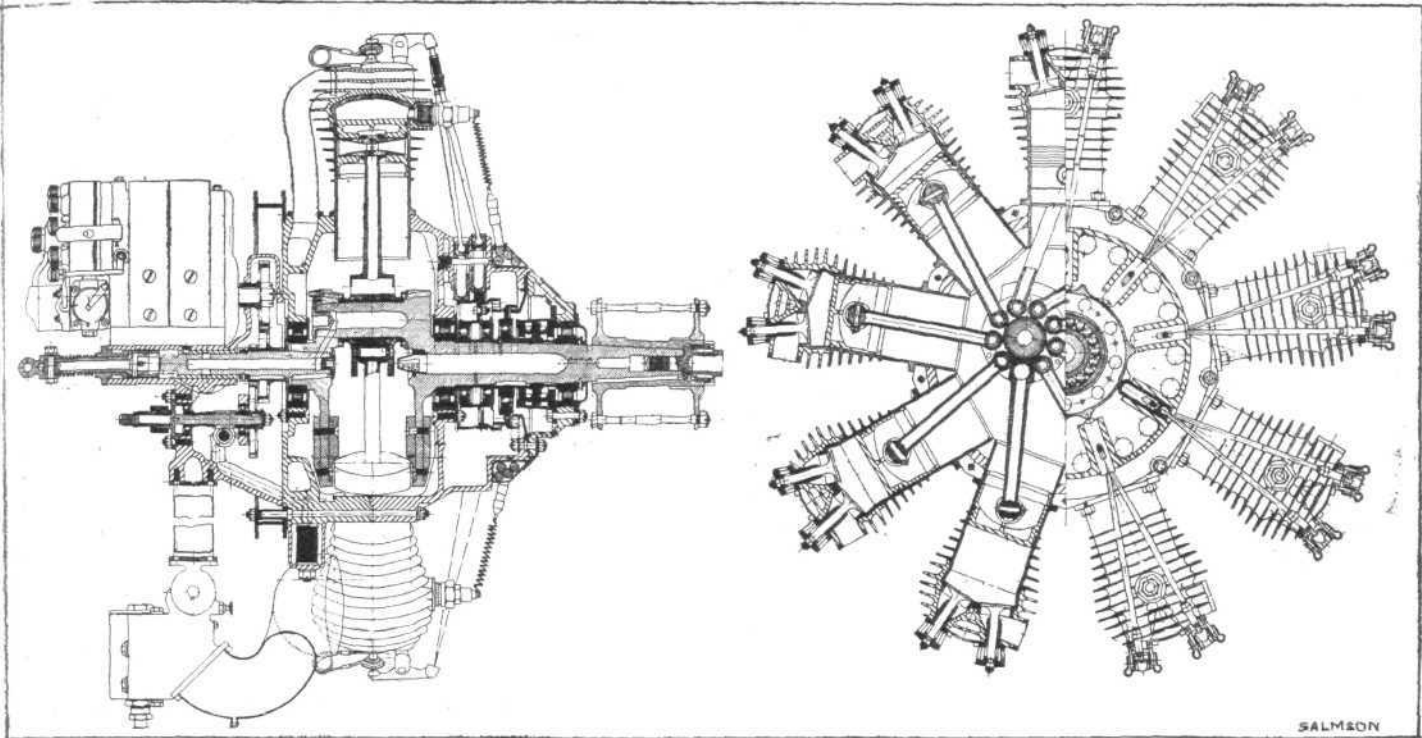
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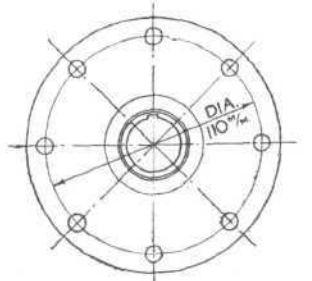
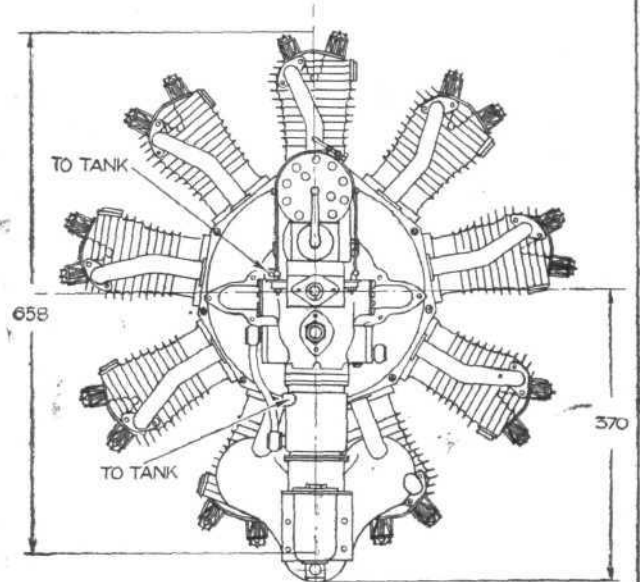
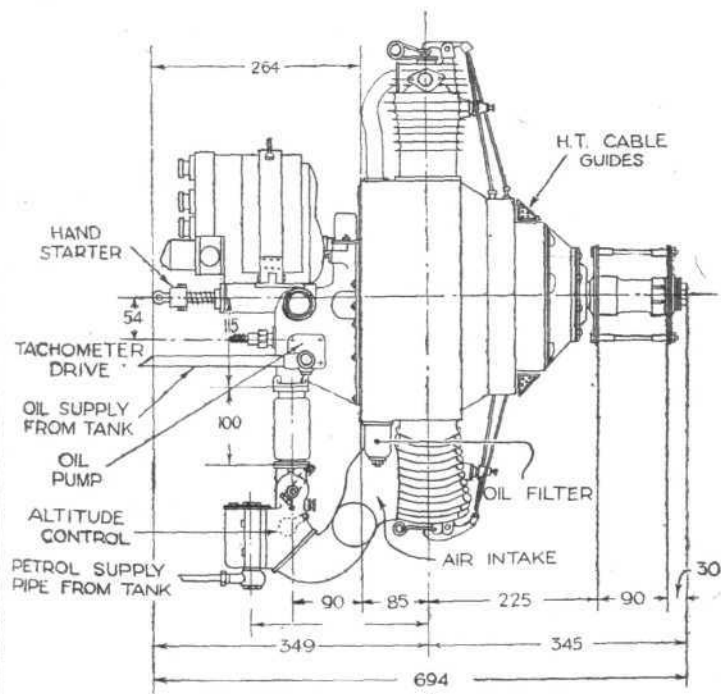
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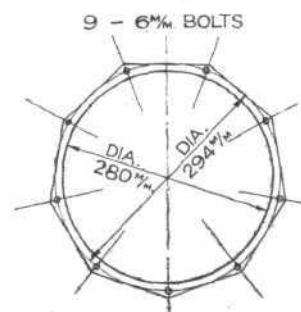




# SALMSON TYPE AD<sub>9</sub> ENGINE. 40 B.H.P.



AIR SCREW BOSS FLANGE.  
8 HOLES @ 8 3/4"



CRANKCASE MOUNTING CENTRES.

THE SALMSON AD<sub>9</sub> AERO ENGINE : Most of the constructional features may be seen in the sectional views above, while the main overall dimensions are given in the installation drawings below.

It is liberally ribbed externally and internally. The rear half of the crankcase carries pumps, magneto, gas distribution, etc., while in the front half is housed the valve gear. The auxiliary drives are all at the back of the engine.

**The Cylinders.**—An unusual feature of the Salmson cylinder construction is that the "poultice" head, which extends a considerable distance down the steel barrel, is neither screwed, shrunk nor bolted on. Exactly how the aluminium head is attached is not clear, and the process is believed to be the secret of the Salmson Company. The sectional views published show that the bulge in the steel cylinder head would prevent the aluminium jacket from being slipped over the cylinder, and it would appear that the head must be cast on *in situ*, using the steel barrel itself as the core.

The steel cylinder is of the closed-end type, the valve seatings being formed integral with the cylinder, while the inlet and exhaust casings are of steel, welded to the cylinder head. The aluminium jacket is nowhere in direct contact with the gases, nor do any of the stresses fall upon it. The lower part of the cylinder barrel has cooling fins formed upon it, and towards the bottom it has a flange supporting it on the crankcase, to which it is attached by four bolts. With this arrangement individual cylinders can be dismantled without interfering with the others.

There are two valves per cylinder, one inlet and one exhaust, and in the French version there is one sparking plug per cylinder, placed on the front of the cylinder. In order to obtain the British Air Ministry's Certificate of Airworthiness presumably it will be necessary to provide for dual ignition, but how the two plugs per cylinder will be placed in the British production type we do not know at the moment. The valves are operated by push rods and rockers, the rocker supports being attached to the steel cylinder head and not to the aluminium "poultice." The valves are retained on their seatings by the double-wire "hairpin" springs which have become typical of all Salmson aero engines.

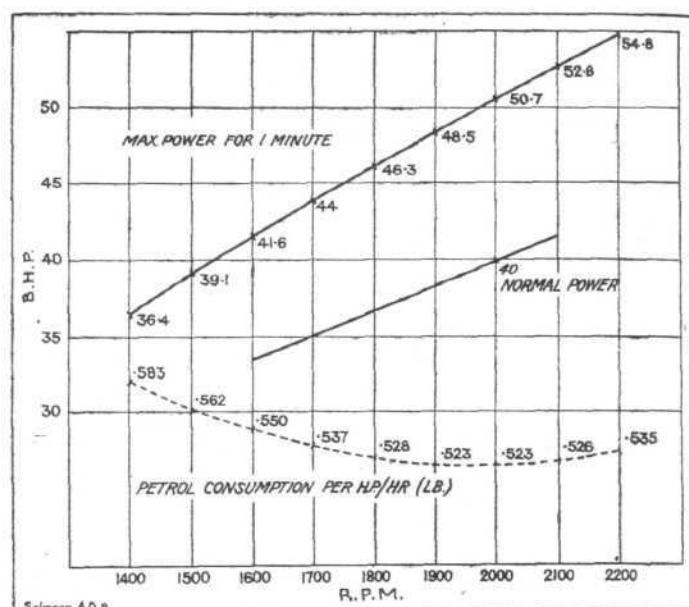
**Pistons.**—The pistons are of aluminium alloy, with flat crowns and internal ribbing. There are three piston rings to each cylinder, one of which is a scraper ring. The gudgeon pin floats in the piston bosses.

**Connecting Rod Assembly.**—This is of the type in which there is a balanced master connecting rod and eight auxiliary rods. The rods are of steel and of tubular cross section. The wrist pins are fixed in the big end of the master rod.

**Crankshaft.**—The crankshaft, of chrome nickel steel, is in two pieces, the forward web and crank pin being integral with the front part. Balance weights are provided opposite the crank pin. The crankshaft is carried in three roller bearings: one near the extreme front end, one in front of the crank throw, and one at the back.

**Valve Operating Gear.**—A single cam ring, integral with which are the inlet and exhaust cams, is mounted inside the forward part of the crankcase. Driven by planet gears in the same direction as the crankshaft, it revolves at one-tenth crankshaft speed. There are five cams in each row. The push rods are actuated from the cams via tappets working in guides in the crankcase. The cam assembly and thrust races are closed by the cover bolted to the front of the crankcase.

**Oil System.**—Lubrication is the usual dry-sump type, with two gear type oil pumps mounted on the back of the engine, one a pressure pump and the other a scavenge pump. From the tank the oil enters the hollow rear end of the crankshaft via a filter and is delivered under pressure to the hollow crankpin. Through passages in the pin it enters the big



THE SALMSON AD 9 AERO ENGINE: Power and consumption curves. The compression ratio is 6.5 : 1.

end of the master connecting rod and is led, through the hollow connecting rods, to the various gudgeon pins. The valve timing gear is lubricated by splash. Excess oil delivered to the gudgeon pins, pistons, etc., is removed from the cylinder walls by the scraper rings and ultimately collects in the bottom of the crankcase, where it drains into a filter and is removed by the scavenge pump and returned to the tank via an oil cooler.

The rocker fulcrum pins are of fairly large diameter and are hollow so as to form small reservoirs for the lubricant. A special pump is supplied with the engine for filling these hollow pins before each flight.

**Induction System.**—The mixture supplied by a Zenith type 26 D.K.I. carburettor is led to the collector on the back of the crankcase, whence it is distributed to the individual cylinders via induction pipes placed behind the cylinders. The oil being returned to the tank by the scavenge pump is led through a chamber surrounding the pipe from the carburettor to the collector, and is thus partly cooled while at the same time slightly pre-heating the mixture from the carburettor.

**Ignition.**—Ignition is by a Salmson type G.G. 9 magneto. This magneto produces four sparks per revolution, and is therefore geared to the crankshaft in the ratio 9 : 8. Looking at the engine from in front of a tractor machine, the lower cylinder on the starboard side is numbered 1, and the order of firing is 1, 3, 5, 7, 9, 2, 4, 6, 8.

**Hand Starter.**—A hand turning gear is provided on the back of the engine, consisting of an extension of the crankshaft which has internally formed on it a worm of steep pitch, and with which engages a nut externally threaded. A spring withdraws the nut from engagement when the engine fires.

The Salmson A.D. 9 aero engine is altogether a very neat little power plant, its outstanding features being low fuel consumption, small overall diameter and very smooth running. It should, we think, find a considerable market in Great Britain and in the British Dominions.

### Air Minister's New Powers

THE Secretary of State for Air is empowered by an Order in Council announced in the *London Gazette* to restrict aircraft movements when it is brought to his notice:—"That a large number of persons are likely to gather in any district in Great Britain and Northern Ireland for the purpose of witnessing some event of public interest; or that it is intended to hold in any district in Great Britain and Northern Ireland any aircraft race or contest or exhibition of flying."

### New Aircraft Carrier

THE cruiser *Glorious* has been reconstructed as an aircraft carrier at Devonport Dockyard, and is expected to be ready to commission on January 7 for sea trials. She should be ready on February 24, for service in the Mediterranean, where she is to relieve the *Courageous*, her sister ship, the latter being transferred to the Atlantic. The *Glorious* is commanded by Captain D. F. Moir, D.S.O. Her completion will bring up

the total of large carriers in the Fleet Air Arm to six, of which the *Courageous* and *Furious* will be in the Atlantic, the *Eagle* and *Glorious* in the Mediterranean, the *Hermes* in China, and the *Argus* in reserve at Portsmouth.

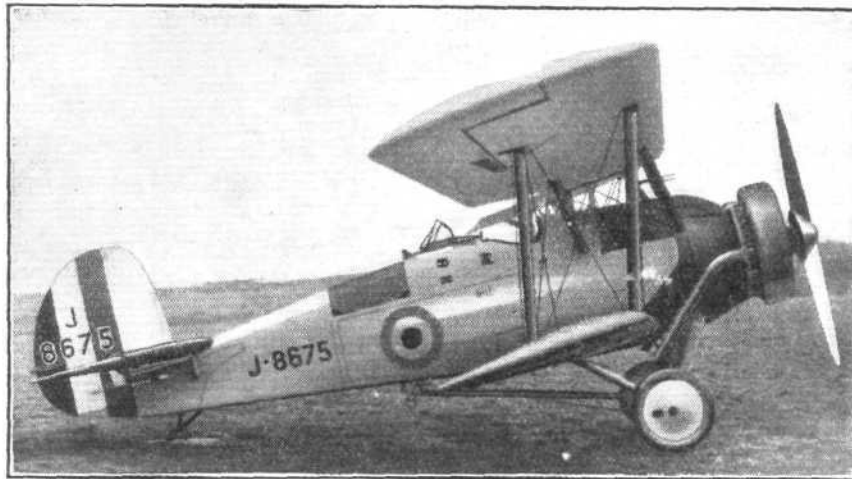
### Agá Khan Prize

H.H. THE AGA KHAN has offered, through the Royal Aero Club, a prize of £500 for the first flight from England to India, or vice versa, by a person of Indian Nationality. It must be a solo flight, completed within six weeks from the date of starting. The prize will remain open for one year from January 1, 1930.

### Bristol "Jupiter" for Denmark

AN order for the supply of 16 "Bristol" Jupiter Series F engines has been placed by the Danish Military Air Force with the Bristol Aeroplane Co., Ltd. These engines are in addition to a number of "Bristol" Jupiters supplied to the same Government earlier in the year.

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### PERFORMANCE FIGURES

#### ATLAS WITH JAGUAR ENGINE AND TOWNEND RING

Fuel, 75 gallons (337 litres). Oil, 7 gallons (32 litres). Military Load, 880 lbs. (400 kgs.)

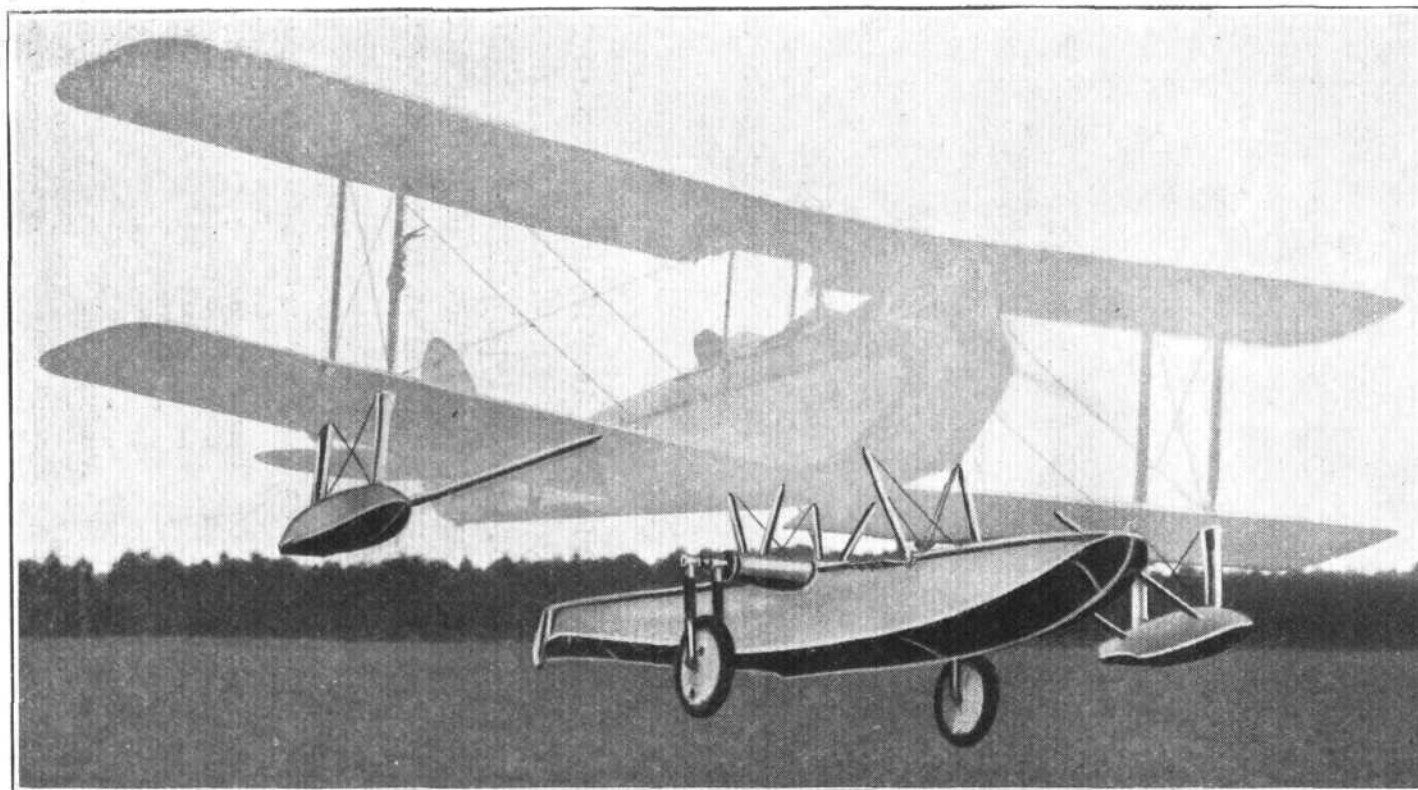
	Plain Engine.	Geared Engine		Plain Engine.	Geared Engine.
Approx. total weight	4000 lbs. 1820 kgs.	4115 lbs. 1870 kgs.	Time to 5000 ft.	5.25 minutes	4.25 minutes
Speed at ground level	143.5 m.p.h.	149 m.p.h.	" " 10000 ft.	12.5 "	10.5 "
" " 5000 ft.	231 m.p.h.	240 km.p.h.	" " 15000 ft.	26 "	21.75 "
" " 10000 ft.	139.5 m.p.h.	145 m.p.h.	" " 1000 mtrs.	3.5 "	2.5 "
" " 15000 ft.	134 m.p.h.	140 m.p.h.	" " 3000 "	12.5 "	10.25 "
" " 1000 metres	125 m.p.h.	131 m.p.h.	" " 5000 "	34 "	27.5 "
" " 3000 metres	226 km.p.h.	236 km.p.h.	Absolute Ceiling	19000 ft.	19100 ft.
" " 5000 metres	216 km.p.h.	225 km.p.h.	Service Ceiling	5800 metres	5830 metres
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# AIR TRANSPORT

## GOODYEAR-ZEPPELIN DEVELOPMENTS

**G**IGANTIC plans for linking up the continents with airship lines are moving forward with new impetus since the world journey of the Graf Zeppelin. Lines between North and South America, between Europe and the two Americas, between the Americas and the East are each being studied from technical and financial standpoints.

From New York to Buenos Aires in four days as against the 20 days of steamship travel, from Los Angeles to Honolulu in 18 hrs. as against four days, from Seville, Spain, to South America in 4 days—these are projects that have brought the airship sharply to the attention of government officials, shipping men and financial leaders.

The fact that the steamship companies are active in the discussions is taken to indicate that they are regarding the airship not as a rival service but as a supplementary—for that percentage of passengers and mail to whom time is important.

The two cities now in the limelight as projected centres for the world traffic by air are both as it happens far inland—Friedrichshafen, Germany, home of the Zeppelin Co., being in central Europe, and Akron, Ohio, home of the North American operations, being in the middle western part of the United States. This would necessitate passenger terminals being near the coast. Likely selections for North America have been made somewhere near Richmond, Virginia, and Los Angeles, California, but the European base is still undetermined.

Buenos Aires and Rio de Janeiro on the east coast of South America; Honolulu, Tokio, Singapore, Manila on the

Pacific are cities most frequently mentioned in discussions of routes.

It is believed that many plans previously indefinite were crystallised at a meeting in Akron between Dr. Eckener and Paul W. Litchfield, President of the Goodyear-Zeppelin Corporation immediately following the world flight.

Dr. Eckener afterwards issued the statement that the German and American companies had come to full agreement as to future developments covering the Atlantic and Pacific oceans, but while there is no merger contemplated of the two groups, a basis had been reached for fullest co-operation.

So important did Dr. Eckener regard the American connection that after his return to Lakehurst, completing his memorable world flight, he turned the Graf Zeppelin over to Capt. E. A. Lohmann, his next in command, to be flown back to Europe, while he went to Akron and spent three days in discussion with Mr. Litchfield and other officers of the Goodyear-Zeppelin Corporation.

The Goodyear-Zeppelin Corporation in America occupies a place comparable to that of the Zeppelin Company in Germany. Goodyear's interest in lighter-than-aircraft dates back to 1912, when an aeronautic department was organised and machinery for the construction of balloons and dirigibles was installed. The company has built more than a hundred airships since then, and more than a thousand balloons, including free balloons for training and kite balloons during the war for observation and direction of artillery fire.

Goodyear took over the Zeppelin rights for the Nor-



GOODYEAR-ZEPPELIN DEVELOPMENT: (1) Dr. Hugo Eckener, Magellan of the Air, at National Air Races in Cleveland, Ohio; Williams R. Hopkins (centre), City Manager of Cleveland and Governor Y. Cooper, of Ohio. (2) Arrival of the Graf Zeppelin at Los Angeles from Tokio. Goodyear airship "Volunteer" acts as escort. (3) Giant airship factory and dock of Goodyear-Zeppelin Corporation at Akron, Ohio, in which will be built and housed the ZRS.4 and ZRS.5, for the United States Navy. (4) Dr. Eckener and P. W. Litchfield, president of the Goodyear-Zeppelin Corporation, inspect the huge airship factory and dock. (5) Dr. Eckener surrounded by admirers just before boarding the Goodyear airship "Defender" to fly from the Cleveland air races to Akron. Maps indicate projected commercial airship lines.

American continent in 1924, and one year ago was given the contract to build two great Zeppelins, each of 6,500,000 cub. ft. capacity, or about twice the size of the Graf Zeppelin, for the United States Navy.

It may be of interest here to give some particulars of these two airships. Their overall length will be 785 ft. and the maximum diameter 132.9 ft. The gross lift will be 403,000 lbs., and the useful lift 182,000 lbs. There will be eight engines, developing a total of 4,480 h.p., which will be housed within the hull (thereby considerably reducing head resistance), driving propellers, supported on brackets from the hull, through transverse shafts and bevel gears. The calculated speed is 72.8 knots, and the range without refuelling, at 50 knots cruising speed, about 10,000 miles. Each ship will carry a crew of 45 men.

The hulls of these airships will consist of duralumin longitudinal and transverse girders, of a new type, with steel wire bracing, the whole being covered with aluminised fabric. An important constructional feature consists in the provision of three longitudinal corridors, and passageways completely around the circumference of each main transverse frame, giving access to all parts of the ship. We believe, also, that a com-

plete aeroplane hangar, housing five scouting aeroplanes, will be provided within the hull of the airship; the aeroplanes will be lowered on a trapeze through large sliding doors in the bottom of the hangar, and will be "slipped" from, and will re-join, the airship by hook-gear.

As an assembly shop for these giant ships a hangar is nearing completion at Akron, which is 1,175 ft. long, 325 ft. wide, 211 ft. high. Dr. Karl Arnstein, former chief engineer for the German Zeppelin Co., and himself the constructor of 68 full rigid ships, joined the American Co. in 1924 as vice-president and chief engineer.

The Goodyear Co. owns the only commercial fleet of airships in the world, having six small non-rigid Blimps, one of these being stationed at Los Angeles, the others operating from various hangars in the eastern part of the United States. It was in the largest of these, the Defender, 180,000 cub. ft., that Dr. Eckener made the flight from the Cleveland air races to Akron, at the conclusion of his world trip.

Col. Charles A. Lindberg, who was taking part in the activities at the air races, was among the crowd to see Dr. Eckener on board the "Defender" and express his best wishes for the culmination of his plans.

### England-India Air Mail Again Delayed

FOLLOWING the recent run of bad luck and consequent dislocation on the England-India Air Mail, Imperial Airways, Ltd., has had considerable difficulty in maintaining the service to schedule, and the last outward mail was again late. Every effort is being made to bring the present temporary Budapest-Salonika route to perfection.

### Another "Calcutta" for Imperial Airways

SHORT BROS (Rochester and Bedford), Ltd., have been instructed by Imperial Airways, Ltd., to proceed with the construction of a fifth "Calcutta" flying boat (Bristol "Jupiters").

### Air Mails for Persia

THE Postmaster-General draws attention to the fact that a considerable proportion of the correspondence posted for transmission to Persia by the Indian Air Mail is being posted insufficiently stamped. The air fee for all correspondence for destinations in Persia is now 5d. per  $\frac{1}{2}$  oz., in addition to the ordinary foreign postage. This fee covers air transmission from London by the direct Indian Air Mail to Baghdad or Bushire, and thence by air into and within Persia as necessary.

### When Pigs Fly

Two Duroc-Jersey pigs, bred by Flack and Gamble, of Burnbank Farm, Berwick, Victoria, were flown in Australian Aerial Services "Love Bird" from Melbourne to Hay, where an Agricultural Show was in progress, last month. After winning prizes at the show, the pigs flew back to Melbourne!

### Western Australian Airways Statistics

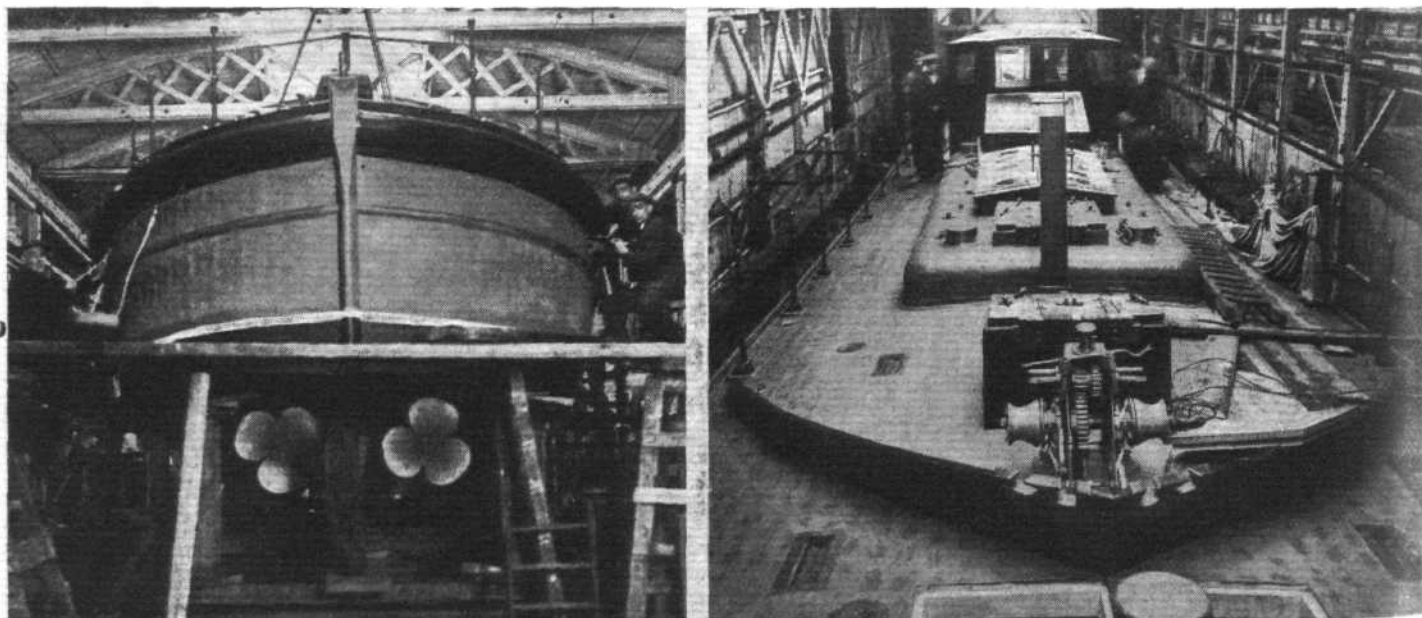
THE following statistics, up to September 30, 1929, have been issued by Western Australian Airways, Ltd.: Passengers carried:—(Perth-Derby), 6,705; (Perth-Adelaide), 1,216; taxi- and joy-rides, 9,194. Machine flights, 9,183. Miles flown, 1,298,019. Letters carried, to June 30: (Perth-Derby), 1,545,317; (Perth-Adelaide), 22,214 lbs. Freight carried: (Perth-Derby), 256,712 lbs.; (Perth-Adelaide), 6,544 lbs.

### Australian Aerial Services Complete 1,000 Flights

AUSTRALIAN AERIAL SERVICES, LTD., on September 26 last completed its one-thousandth flight on its regular aerial mail and passenger services between Melbourne and Hay via Rochester, Echuca, Mathoura and Deniliquin, without a single accident or injury to passenger or crews. The accumulated flying experience of A.A.S. pilots, incidentally, now totals 51 years.

### Air Transport in East Africa

ACCORDING to the Nairobi correspondent of *The Times*, Capt. Guest has completed the initial plans for a survey of the possibilities of civil flying in East Africa. He has divided his organisation into units, one of which has gone to Rhodesia to discuss with the Governments of Northern and Southern Rhodesia the possibilities of linking up those territories with a main air route which, to begin with, is to extend only as far as Mwanza. Another unit, which includes Capt. Guest himself, is on its way to Dar-es-Salaam to discuss with Sir Donald Cameron, the Governor, the provision of "feeder" services in Tanganyika. A third machine, piloted by Miss Spooner, has gone to Uganda on a similar

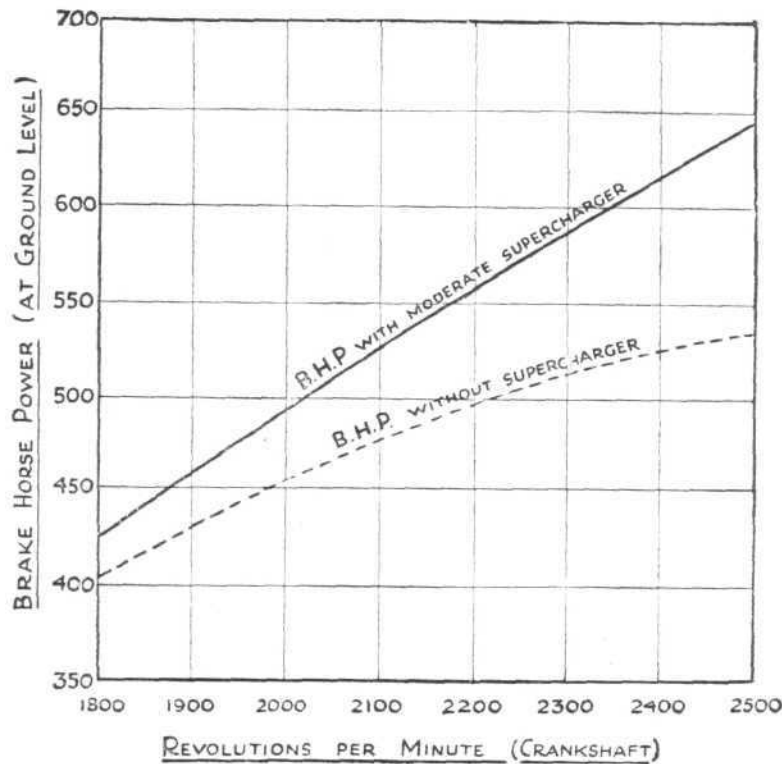


TO MINIMISE CROSS-CHANNEL RISKS: Two views (the stern and deck) of the world's fastest lifeboat which has been constructed by John I. Thornycroft and Co., Ltd., for the Royal National Life-boat Institution, which will be stationed at Dover with the object of going to the assistance of aircraft which might have the misfortune of coming down in the sea. It is 64 ft. long, and has two 375-h.p. engines, which will give a speed of 17 to 18 knots. (Flight Photos.)



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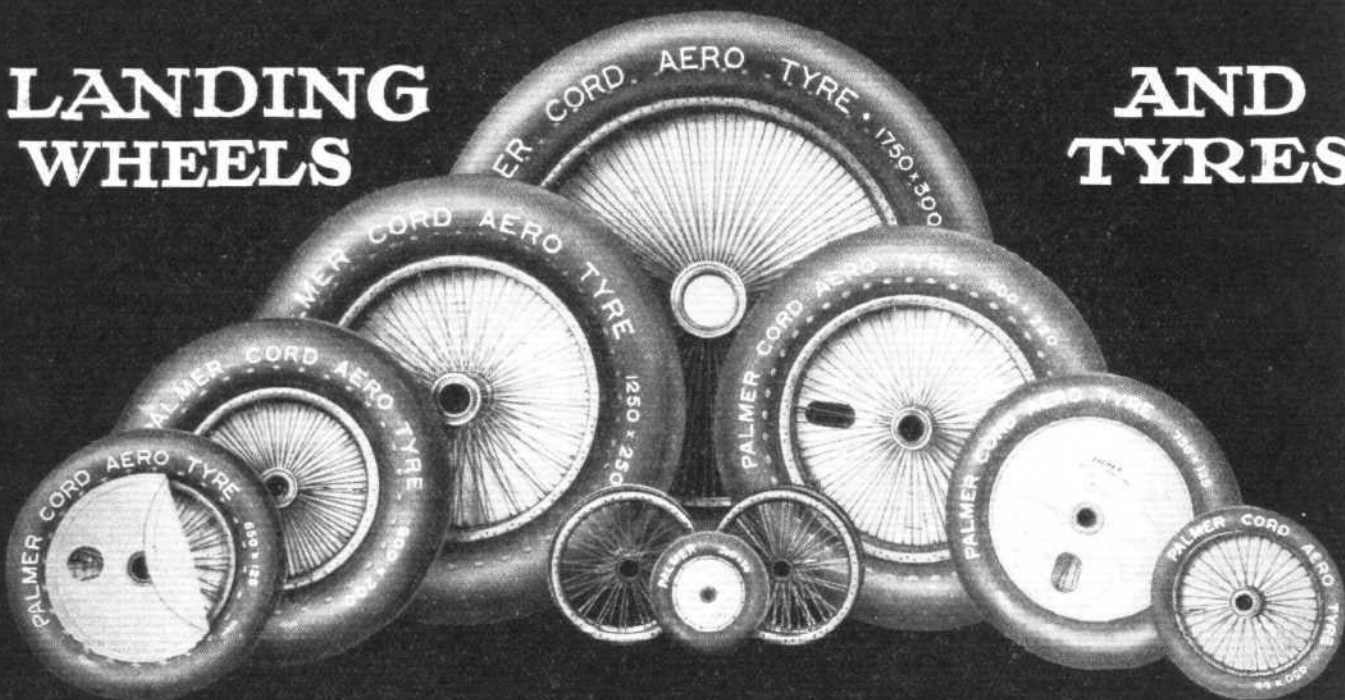


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		Length	Bore				Length	Bore				Length	Bore	
375 x 55	168	111.12	25.4	m/m Central	700 x 100	176	178	44.45	m/m Central	1000 x 180	148	220	80	m/m Central
"	195	130	38.09	Central	"	179	178	55	132/46	"	149	185	55	Central
300 x 60	16	111.12	25.4	Central	650 x 125	119	178	55	132/46	"	155	220	66.67	Central
450 x 60	30	89	31.75	Central	"	147	178	55	Central	"	166	185	55	125/60
"	172	130	38.09	Central	"	188	120	34.92	Central	900 x 200	107	185	55	Central
575 x 60	21	160	28	Central	"	336	178	44.45	132/46	"	108	185	55	Central
"	180	150	38.09	104/46	750 x 125	77	178	44.45	132/46	"	128	220	66.67	Central
"	186	120	34.92	Central	"	92	185	55	135/50	"	137	250	80	Central
"	190	150	38.09	Central	"	95	185	55	Central	"	157	185	80	Central
600 x 75	21	160	28	Central	"	99	178	38.89	Central	"	202	185	60.32	Central
"	180	150	38.09	104/46	"	95	185	55	Central	1100 x 220	134	220	66.67	Central
"	186	120	34.92	Central	"	112	150	38.09	Central	"	136	250	80	Central
"	190	150	38.09	Central	"	176	178	44.45	Central	975 x 225	192	185	60.32	Central
700 x 75	78	178	44.45	132/46	"	179	178	55	132/46	"	194	185	55	125/60
"	79	178	44.45	Central	800 x 150	161	185	55	135/50	1100 x 250	364	220	60.32	Central
"	100	178	38.09	132/46	"	162	185	55	Central	1250 x 250	314	250	80	Central
"	101	178	31.75	132/46	"	163	185	66.67	135/50	"	154	304.8	101.6	Central
"	196	178	55	Central	"	169	185	55	135/50	1500 x 300	305	304.8	152.4	Central
800 x 100	188	120	34.92	Central	"	177	185	55	135/50	"	306	304.8	101.6	Central
"	304	150	38.09	104/46	"	183	185	55	Central	1525 x 325	197	304.8	101.6	Central
"	333	120	34.92	Central	"	211	185	60.32	135/50	1750 x 300	139	400	152.4	Central
700 x 100	77	178	44.45	132/46	1000 x 150	167	185	55	125/60	"	191	350	150.3	Central
"	92	185	55	135/50	"	174	250	80	Central	1750 x 350	193	400	125	Central
"	95	185	55	Central	"	182	185	55	Central	2000 x 450	363	500	152.4	Central
"	99	178	38.89	132/46	"	187	220	66.67	Central					
"	112	150	38.09	Central	"	201	185	60.32	125/60					
					"	210	185	60.32	Central					

\* Wheels Nos. 161, 162, 163, and 211 are of stronger type than the other wheels for 800 x 150 tyres. † Wheel No. 169 is fitted with Ball Bearings. Grease gun equipment is now a standard fitting on all wheels. (S/NL)

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mission. Each party is to report on possible aerodrome sites on its line of flight. Wilson Air Lines, Ltd., in whose machine, *Knight of the Grail*, Mr. Campbell Black arrived at Nairobi from London on November 11, is also planning to carry out work of investigation. The company's second three-engined machine is due in December. It is reported that Sir Alan Cobham will shortly fly to East Africa in connection with preliminary arrangements for a main air line. Civil aviation in East Africa, after two years of depression, is now reviving.

#### Ambitious New York-London Air Service

ACCORDING to the *Daily Telegraph's* New York Correspondent, tenders for the construction of a giant aeroplane to carry 500 passengers and a crew of 100, and capable of flying between New York and London in six hours, have been invited by a responsible New York concern—the engineering firm of Westcott and Mapes, who say that they have in view the construction of a Transatlantic air liner to cost £1,000,000, with twelve 1,000-h.p. motors, and having a span of 500 ft.

#### Swedish Air Transport Record

Six years' regular air traffic without injury to any passenger is the proud record announced by Capt. C. Florman, managing director of the Swedish Aerotransport Company. The number of passengers and the quantity of goods carried by the company on its Continental air routes during this year have increased considerably in comparison with previous years, especially the mail transport, which this year amounted to 59,400 kg. against 38,800 kg. in 1928. During the six years of its existence the Aerotransport Company has carried about 358,000 kg. of freight and nearly 61,200 passengers. On the Stockholm-Helsingfors route the number of passengers this year increased by about 70 per cent. in comparison with 1928. For the coming year the traffic on the lines connecting Sweden with the Continent will be further intensified by using new and bigger machines, carrying 18 to 20 passengers, and it is hoped gradually to extend the flying season so as finally to arrive at an all-the-year-round service.

## THE LIGHT 'PLANE TOUR OF EUROPE

### Final Award of Prizes

THE Contest Committee of the Aero Club of France, at their recent meeting, "homologued" the standing, which they announced as provisional a short time ago, of the various winning 'planes in the "Challenge International de Tourisme" (International Reliability Race), which took place around Europe between August 5 to 16 last. It will be recalled that the Aero Club of Italy entered a protest against several of the participants, amongst them three of the leading 'planes, asking that they be disqualified as it was claimed that they flew over interdicted zones in Italian territory. The Contest Committee found this protest was not proven, and, sustaining its provisional classification, has awarded the following prizes:—

- 1st Prize.—100,000 francs to the Deutsche Verkehrsfliegerschule (BFW M. 23b, 70-h.p. Siemens-Halske), pilot, Fritz Morzik.
- 2nd Prize.—50,000 francs to the De Havilland Aircraft Co. (D.H. "Moth," 85-h.p. Gipsy Moth), pilot, Captain H. Broad.
- 3rd Prize.—25,000 francs to the Raab Katzenstein Co. (Raka RK 25, 90-h.p. Cirrus, Mark III), pilot John Carberry.
- 4th Prize.—7,350 francs to the Leichtflugzeugbau, Klemm Co. (Klemm L. 25, 40-h.p. Salmson AD 9), pilot R. Lusser.
- 5th Prize.—7,350 francs to the Officine Ferrovie Meridionali (Romeo R. 5, 85-h.p. Fiat), pilot, Guazzetti.
- 6th Prize.—7,350 francs to Oscar Caminetti (B.F.W. M. 23b, 70-h.p. Siemens-Halske), pilot, Freiherr v. Dungern.
- 7th Prize.—7,350 francs to Societe An Avia (B.H. II Antilopa, 85-h.p.), pilot, Fr. Kleps.
- 8th Prize.—7,350 francs to Officine Ferrovie Meridionali (Romeo R. 5, 85-h.p. Fiat), pilot, Castaldo.
- 9th Prize.—7,350 francs to Officine Ferrovie Meridionali (Romeo R. 5, 85-h.p. Fiat), pilot, Gelmetti.
- 10th Prize.—7,350 francs to Miss Spooner (De Havilland "Moth", 85-h.p. Gipsy Moth), pilot, Miss Spooner.
- 11th Prize.—7,350 francs to the Junkers Flugzeugwerk (Junkers A. 50, 80-h.p. Genet), pilot, Roeder Waldem.
- 12th Prize.—7,350 francs to Benassati Carlo (Romeo R. 5, 85-h.p. Fiat), pilot, Benassati Carlo.
- 13th Prize.—7,350 francs to Francis Carlo Lombardi (Fiat A.S. I, 80-h.p. Fiat), pilot, Francis Carlo Lombardi.
- 14th Prize.—7,350 francs to Societe An Aeronautica Italia (Fiat A.S. I, 85-h.p. Fiat), pilot, Bottalla Battista.
- 15th Prize.—7,350 francs to Hans Wirth (Klemm L. 25, 40-h.p. Salmson), pilot, Hans Wirth (Swiss).
- 16th Prize.—7,350 francs to Fritz Siebel (Klemm L. 25, IIa, 40-h.p. Salmson), pilot, Poss.
- 17th Prize.—7,350 francs to Junkers Flugzeugwerke (Junkers A. 50, 80-h.p. Genet), pilot, Kneer.
- 18th Prize.—7,350 francs to Aero Club von Deutschland (B.F.W. 23b, 70-h.p. Siemens Halske), pilot, Eric Offerman.
- 19th Prize.—7,350 francs to the Leichtflugzeugbau Klemm (Klemm L. 26, 70-h.p. Siemens Halske), pilot, Kirsch.
- 20th Prize.—7,350 francs to Fritz Siebel (Klemm L. 25 IIa, 40-h.p. Salmson), pilot, Fritz Siebel.

As the Deutsche Verkehrsfliegerschule, whose plane the BFW M 23b, piloted by Fritz Morzik, won first prize, it will receive the following additional awards. The prize presented by the President of the Republic of France consisting of a Sevres Vase. A tourist plane, together with the motor, presented by the Fiat Company. A gold medal presented by the Italian Air Ministry. The medal of the Aero Club von Deutschland (of Germany). A motorcycle presented by the Deutsche Industrie Werke of Spanday.

The De Havilland Co., who won second prize with their "Moth" plane, piloted by Captain Broad, will receive in addition an Italian aviation tourist motor and a gold medal. Mr. Weedon, the passenger of Broad, will receive a Deltrinton pair of field glasses, presented by the Karl Zeiss Co.

The Renault Automobile Co. (Paris) will present a 6-h.p. automobile, covered car, to the Leichtflugzeugbau Klemm, their plane, the Klemm L. 25, piloted by Lusser being the first of the planes equipped with a French motor (a 40-h.p. Salmson) to finish.

A 60-h.p. Walter motor will be presented by the Walter Motor Co. to the Societe Avia as its plane, the B.H. II Antilopa, piloted by Kleps, obtained the greatest number of points for practical qualities and was at the same time classed among the first ten.

A handsome scarf will be presented by the French firm, the Rodier Novelty Co. to Miss Spooner.

#### Prizes Awarded in the Various Categories

**First Category.**—The prize presented by the City of Prague, a trophy of the value of 10,000 crowns, will be awarded to the Deutsche Verkehrsfliegerschule (German School of Commercial Flying), pilot Fritz Morzik, as having won first place in the contest.

A 3-h.p. Gnome and Rhone motorcycle will be awarded to the Raab Katzenstein Co. as its plane, the Raka "RK 25," piloted by Carberry, attained the best commercial speed on the European Circuit (in the first category).

**Second Category.**—A 3-h.p. Gnome & Rhone motorcycle will be awarded to the Deutsche Verkehrsfliegerschule (German School of Commercial Flying) as its plane, the BFW M 23 b, piloted by Morzik, attained the best commercial speed on the European circuit (for the 2nd category).

#### Prizes for Various Sections of the Course

The prize presented by the City of Paris, consisting of a pair of vases made by the National Manufacturing Co. of Sevres, will be awarded to the Raab Katzenstein Co. as its plane the "Raka 25" piloted by Carberry had the best general standing and arrived among the first five contestants who actually crossed the finishing line.

A Cup presented by Prince Bibesco, President of the Aero Club of Roumania, will be awarded to Delmotte, who arrived first at Bucarest.

The Municipal Council of Budapest will award a handsome souvenir plaque to all the participants.

A Bohemian Crystal Cup, of a value of 15,000 crowns, presented by the Aero club of Czechoslovakia, will be awarded to the Raab Katzenstein Co., as its plane the "Raka 25," piloted by Carberry, obtained the best standing between Paris and Prague.

The Municipal Council of Breslau will present a prize of 500 marks to the De Havilland Aircraft Co., as its plane, the De Havilland "Moth" piloted by Broad, landed the first at Breslau (in the first category).

The Municipal Council will also present a prize of 500 marks to the Aero Club (of Germany) as its plane the BFW 23 b, piloted by Offerman, landed the first at Breslau (in the second category).

An honour prize presented by the Minister of Communications of the Republic of Poland will be awarded to the Raab Katzenstein Co. as its "Raka 25" plane (Carberry), obtained the best standing (classification), between Warsaw and Paris.

Three silver cups presented by the Senate of the City of Hamburg, will be awarded to the three pilots of the 1st category who landed first at Hamburg, as follows: Captain Broad (D.H. "Moth"); Miss Spooner (D.H. "Moth"); Kirsch (Klemm L. 26).

Three Silver Cups presented by the Senate of the City of Hamburg will be awarded to the three pilots of the 2nd Category who landed first at Hamburg, as follows:—Eric Offerman (BFW 23 b); Freiherr v. Dungern (BFW 23 b); Fritz Morzik (BFW 23 b).

Silver Cups presented by the Municipal Council of Berlin will be awarded to all the flyers who landed at Berlin.

The Royal Aero Club of Belgium will present a Cup and Medals to be awarded as follows: An Enamel Medal inscribed "The Effort," to Captain Broad, who landed the first at Brussels, 1st category. A Silver Medal similarly inscribed to Eric Offerman, who landed first at Brussels, 2nd Category. A Bronze Medal "The Effort," to John Carberry, who landed second at Brussels, 1st Category. A Bronze Medal, "The Effort," to R. Lusser, who landed second at Brussels, 2nd Category.

A Cup of the value of 1,000 francs, will be awarded to Mr. Jaques Maus, of Belgian nationality.

The Prize presented by the Austrian Minister of Commerce and of Traffic will be awarded to the De Havilland Co., as its "Moth" plane piloted by Broad was the winner in the 1st Category.

The Prize presented by the Foreign Traffic Commission, of Vienna and Lower Austria, will be awarded to Carberry as being the first contestant to land on the Aerodrome of Aspern.

The Minister of Public Instruction will present a Prize which will be awarded to the Deutsche Verkehrsfliegerschule (Morzik, BFW 23 b) as winner in the 2nd Category.

The Honour Prize of the German Minister of the Interior, consisting of a Government Plaque will be awarded to the Pilot Fritz Morzik, as having obtained the leading place in the general classification.

The Challenge Cup, presented by the Aero Club of France, will be awarded for one year to the Deutsche Luftfahrt (German Air Council) as the German plane, the BFW M 23 b, piloted by Fritz Morzik, won the Challenge.

Under the deed of gift, this Challenge Cup is to be retained for one year by the Aero Club of the Country whose representative wins the Challenge. In order to retain it permanently it is necessary to win it three times in succession.

The Aero Club of Germany, as the winning organisation, will have the management and direction of the Challenge for next year. This year's contest was a great success, and a still larger number of entries are looked forward to for 1930.



# METAL COATING BY SPRAYING

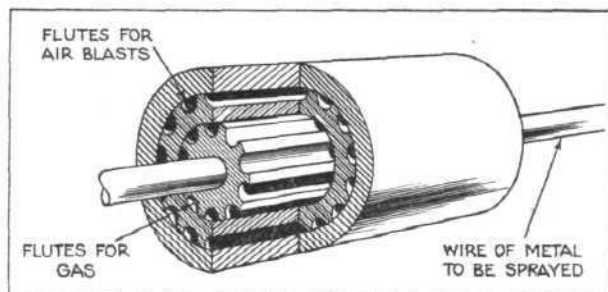
**C**OATING metallic or non-metallic articles by means of a pistol which sprays the metal in a molten state has been a commercial proposition for the last 15-20 years, but recently great improvements have been made with the apparatus used, and it is now becoming an industry with very vast possibilities; in fact there seems to be no end to the application of this form of coating, as the following list of trades which are using this process show:—Aircraft, arma-

ment, aluminium, acetylene, aerial masts, artificial silk, bleachers, boilermakers, breweries, celluloid, chemical industries, dairy appliances, distilleries, domestic utensils, dye works, electrical engineering, electric cable manufacturers, general engineering, hydraulic engineering, motor engineering, foundries, filters, firefloat, food vessels, gas works, government departments, glass works, iron and steel works, margarine manufacturers, metal windows, meters, mineral water manufacturers, oil works, optical glass, ornamental iron work, porcelain, paint, paper machinery, public works, plating works, railway equipment, rubber and tyres, refrigerators, scales and weighbridges, shipping, scientific instruments, sugar, tube mills, telephones, tank makers, textiles, tobacco, valves, wire rope, vulcanisers, wheels, etc. The coating when applied to any material is very durable and almost any metal which is capable of being drawn into wire can be sprayed on to any surface.

Ferrous metals can be applied to non-ferrous metals and *vice versa*, and any metal can be sprayed on to any non-metallic substances such as glass, porcelain, brick, stone, wood, leather and fabrics.

The process was originally developed in Germany and then in America, and at the outbreak of the war very little was being done in this country, lately, however, Metals Coating Co., Ltd., of 22, Birch Lane, London, E.C.3, have acquired the sole world's rights, and now, with the new form of pistol, a great deal of work is being done.

Although metal coating is chiefly considered as a means of combating corrosion, there are also such uses as decoration, and uses for electrical apparatus. For combating corrosion, zinc spraying is the most widely used method, and a large amount of work is being done coating steel vessels and structures to prevent atmospheric corrosion. Another process which has a wide range of application is known as

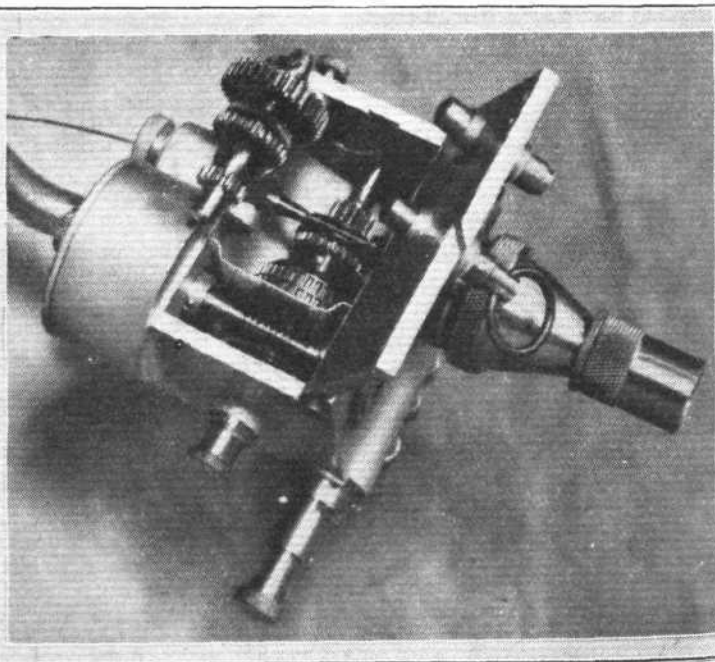
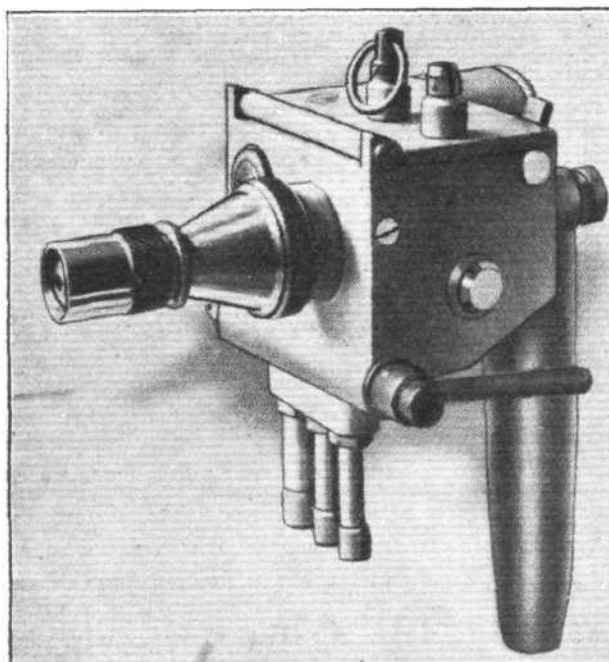


The construction of the pistol nozzle shown diagrammatically and much enlarged.

parts which are subject to prolonged heat, such as superheater tubes, annealing and case-hardening boxes, and all parts of gas burners, furnaces and cookers, are examples of parts which benefit from this treatment. The pistol method is the only way aluminium can be applied rapidly and economically without the use of heat. With this method the aluminium is sprayed on the article and then, should it be a part which normally becomes heated in service there is nothing more to be done, as, say, in the case of an annealing box, the heat of the furnace the next time it is used automatically completes the process. As an interesting example, the writer was shown some lengths of gas pipe in a muffle furnace, these pipes had one end aluminised and the other end left in the natural state and the aluminised end was perfectly clean, while the other end was covered with the usual scale.

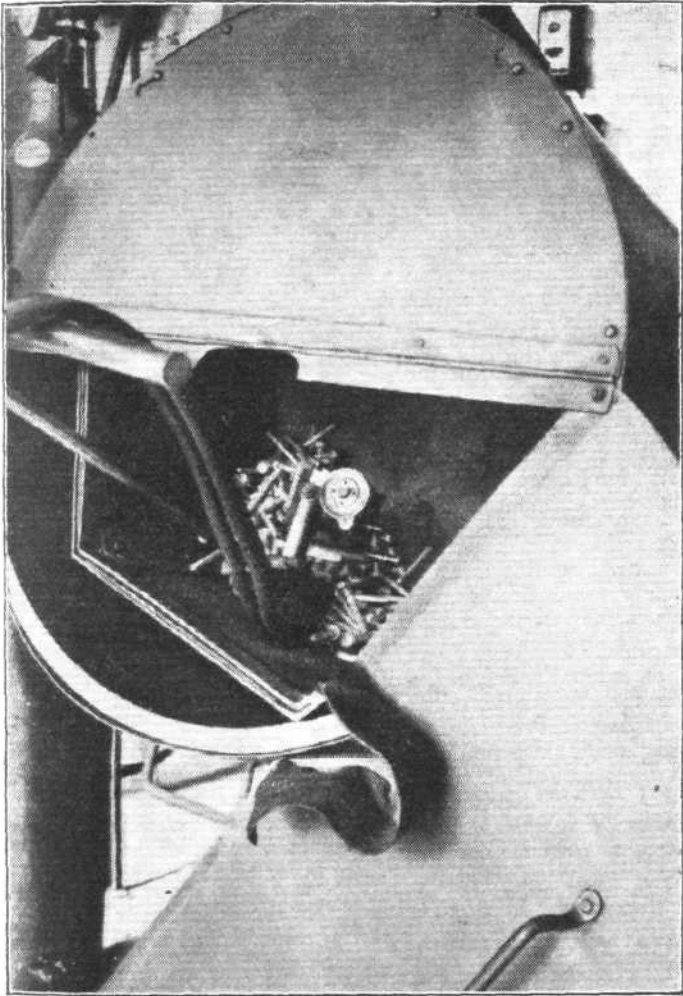
Zincing is one of the uses to which the pistol can be put, which has a particular use with regard to aircraft. When an electrolytic couple is formed of zinc and iron, the zinc is attacked first by any aqueous solution and during this attack it protects the iron completely, but, for this protection to be certain the zinc must be pure and this is where the pistol method scores so heavily over galvanising. With the pistol method of deposition the zinc cannot become adulterated in any way whereas in galvanising there is not only the acid which may remain on the iron but also the possibility of impurities in it contaminating the zinc; moreover, large structures cannot easily be galvanised nor can they be protected after riveting, while with the pistol method this work can be tackled *in situ*.

Many other advantages can be claimed for this method, for instance, the fact that the process requires no heat prevents distortion of such articles as light tanks, also temper cannot be affected, therefore engine valve springs can be treated without damage; welded joints or riveted heads



**TWO VIEWS OF THE PISTOL:** On the left, the three inlets for gas, oxygen and air can be seen with the lever controlling them. On the right, the lid is open showing the wire passing in over the lower serrated roller.

can be treated as simply as the flat surface; the thickness of the coating can be varied to suit the likelihood of corrosion of various parts of the same article, which cannot be done with any other method; small articles, such as bolts and nuts, can be coated in mass by a special form of drum in a very short time and very cheaply; internal surfaces can, by means of an extension nozzle, be adequately dealt with, and such things as the inside of condenser tubes offer no great difficulty.



The mass coating drum showing the flat sides and the pistol in position. The lower door is open so that the work may be seen as it is sprayed.

In this case the extension with a rotating nozzle at its end is passed into the tubes by hand and held in a central position by a small collar.

The pistol itself is very light and weighs only  $3\frac{1}{2}$  lbs. The flow of the gas mixture and also of the compressed air is regulated by means of controls at the side of the pistol, and the pressures are regulated at the source of supply.

The wire which is the metal to be sprayed is fed through the centre of the nozzle by a system of gears which are worked by a small turbine. This turbine is worked from the compressed air supply and its speed is regulated by means of a small screw valve which controls the amount of air admitted.

The turbine is made of aluminium and runs on ball bearings at about 15,000 r.p.m. A worm on the extension of the rotor shaft drives a worm wheel which is keyed to a cross shaft carrying other gear wheels and a knurled roller, and hinged above this cross shaft, so that when swung down it lies parallel to it, is another shaft which is driven from gears meshing in those on the first shaft and also carries a knurled roller, these two rollers lie in one plane when the two sets of gears are in mesh and by their serrations serve to feed the wire through the nozzle at a speed determined by the air supply to the turbine.

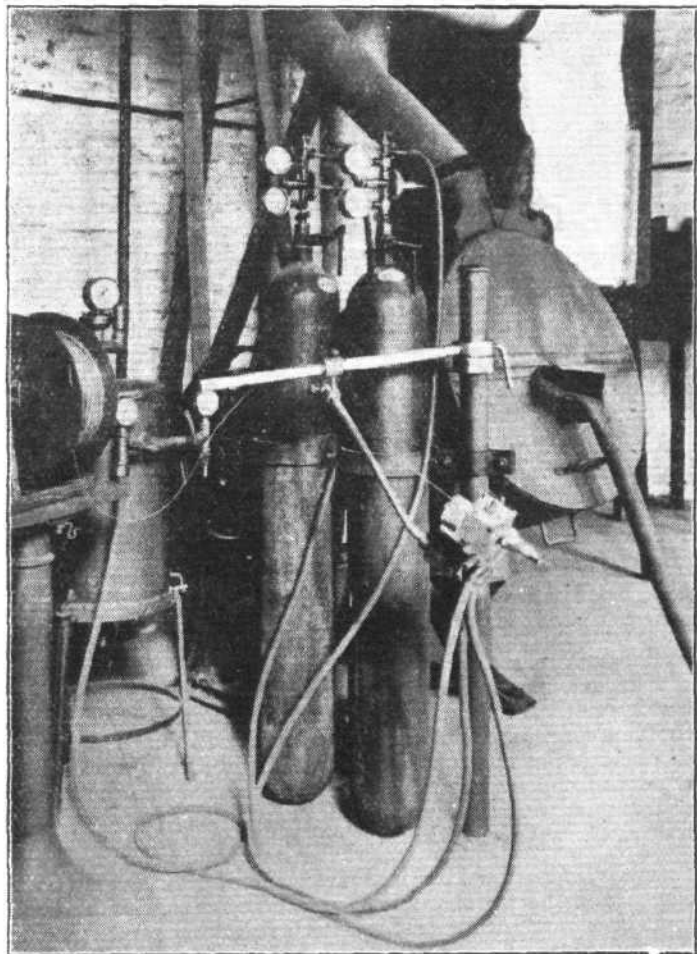
Two studs extend through the cover of the pistol and ensure that the gears on the hinged shaft cannot be swung out of mesh with those on the main driving shaft when the pistol is in use.

The combustible gas used may be hydrogen, coal gas, or

acetylene. In most cases it will be found that coal gas compressed in a small compressor, to 25 lbs. per sq. in. is the cheapest. The gas and oxygen pass through pipes in the body of the pistol, to a mixing chamber in the nozzle, where a series of baffles ensure that the mixture is entirely homogeneous before it passes through ducts, in the form of fine serrations, on the outer surface of the wire nozzle, to the jet where the combustion takes place. The compressed air which is not used to drive the turbine passes through an outer casing surrounding the gas-mixing chamber and thence through a second series of serrations on the outer surface of the gas nozzle; thus the gas jet is surrounded by a stream of air which serves to atomise the molten metal and carry it forward on to the work at a velocity of approximately 3,000 ft. per sec.

The compressed air should be supplied to the pistol at about 50 to 45 lbs. per sq. in. pressure and the consumption is about 15 cub. ft. per min.

When spraying it is important that the spray should strike the work at right angles and for most work the pistol should be held about 3 to 5 in. away from the work. When working in confined spaces such as inside tanks, a good exhaust system is desirable and respirators should be worn as a certain amount of the sprayed metal is bound to be disseminated into the surrounding air which, if absorbed into the lungs, would be harmful.



The mass coating drum with the sand-blasting nozzle in position. The swing arm carrying the pistol is on the left.

All metal parts which are to be sprayed must be perfectly clean and free from grease and the surface must have an open texture so they are always sand-blasted and sprayed immediately afterwards to obviate the danger of rust or moisture adhering to the surface.

Owing to the cooling action of the air stream there is practically no heat developed at the surface of the work and the metal being so finely divided cools instantly so that the surface sprayed does not get burnt in any way and it is quite possible to spray on to fabrics or paper, and such things as lamp shades or ladies dresses may be very artistically decorated by this means.

The following tables show the approximate consumption



of wire and gas per hour when using both coal gas and hydrogen :—

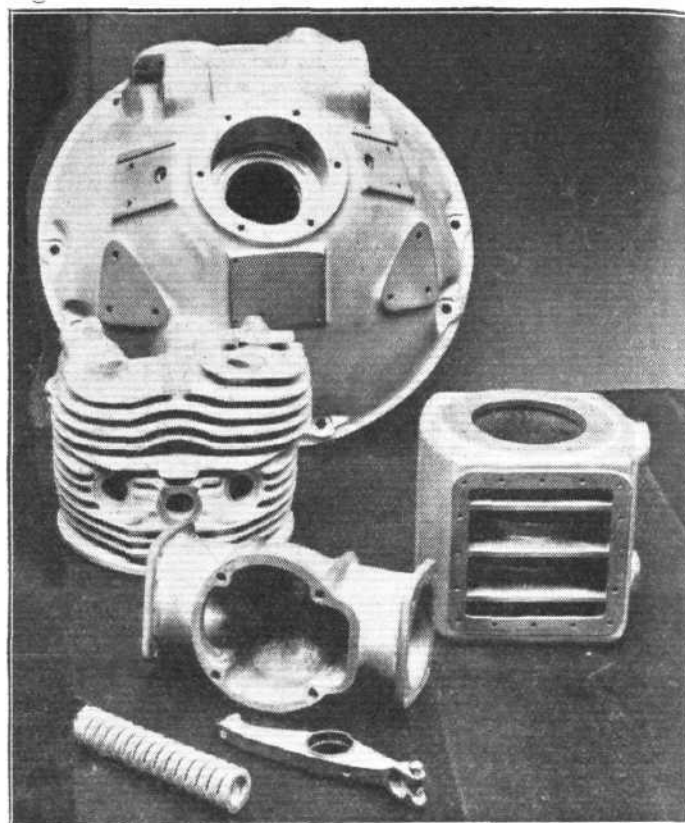
TABLE I.—Consumption of Wire and Gases per Hour Using Coal Gas

Metal	Diameter of wire, m/in.	Weight per sq. ft. per 0.001-in. oz.	Metal sprayed per hour, lb.	Metal deposited per hour, lb.	Oxygen.		Coal Gas	
					Cubic feet per hour.	Pressure : lb. per sq. in.	Cubic feet per hour.	Pressure : lb. per sq. in.
Lead ..	1.5	0.938	14.000	11.000	30	24	45	24
Tin ..	1.5	0.601	6.000	4.500	25	20	38	20
Zinc ..	1.5	0.663	5.500	4.250	33	26	48	26
Aluminium ..	1.0	0.211	1.250	1.000	36	30	54	30
Copper ..	1.0	0.732	1.125	0.875	45	32	67	32
Bronze ..	1.0	0.732	1.125	0.875	45	32	67	32
Brass ..	1.0	0.710	1.250	1.000	45	32	67	32

TABLE II.—Consumption of Wire and Gases per Hour using Hydrogen

Metal.	Diameter of wire, m/in.	Weight per sq. ft. per 0.001-in. oz.	Metal sprayed per hour, lb.	Metal deposited per hour, lb.	Oxygen.		Hydrogen.	
					Cubic feet per hour.	Pressure : lb. per sq. in.	Cubic feet per hour.	Pressure : lb. per sq. in.
Lead ..	1.5	0.938	16.000	12.500	23	16	67	15
Tin ..	1.5	0.601	7.500	5.250	20	15	50	14
Zinc ..	1.5	0.663	6.500	5.250	25	16	70	15
Aluminium ..	1.0	0.211	1.500	1.250	28	20	70	15
Copper ..	1.0	0.732	1.250	1.000	32	20	75	17
Bronze ..	1.0	0.732	1.250	1.000	30	20	70	17
Brass ..	1.0	0.710	1.375	1.125	30	20	70	17

The application of this process, which has a particular appeal to aircraft manufacturers, is the mass-coating of nuts, bolts and, in fact, any small articles. The photographs show the arrangement used. The mass-coating drum is driven by belt from an overhead shaft and bevel gearing, while the angle of inclination can be varied as required by means of a hand-operated pinion engaging a quadrant gear. The first operation is to sand blast the contents of the drum ; this is done by inserting the nozzle of the sand blast through the leather-rimmed orifice in the cover of the drum and then the drum is revolved while the blast is on, during the revolutions the flat sides of the drum turn the contents over and



A series of aero engine castings from Armstrong-Siddeley which are sprayed with zinc.

over, and every side of each article is presented to the blast. When the sand blasting is complete—with nuts and bolts it only takes a few minutes—the drum is cleaned out and the pistol which is mounted on a swinging arm is swung into the orifice and the spraying operation carried out. This method is very much cheaper than any form of plating and has the added advantage that the metal deposited is absolutely pure and cannot become adulterated during deposition, and, moreover, the adhesion obtained is practically perfect and there can never be any tendency to lift, after weathering, as there may be with plating.

## SILENCE

IN the following article the writer, Mr. D. E. Turner, discusses briefly the causes and possible solutions of the various noises caused by an aeroplane in flight.

Will the day arrive when aeroplanes will go through the air as quietly as a Phantom Rolls glides down Bond Street? Perhaps so, perhaps not. Cotton wool is still used as a form of noise baffle on some air lines ; stuffed into one's aural organs of course !

What noises are experienced in an aeroplane ? Briefly these are—Fuselage noises, engine noises, propeller noises, exhaust noises.

**Fuselage Noises.**—These are slowly, but surely, being reduced by better stream-lining, and elimination of struts and wires. It is difficult, however, to see how total abolition can be achieved, as a mass, moving rapidly through space, must necessarily create a certain amount of noise.

**Engine Noises.**—These are most pronounced on the radial type of air-cooled engine and consist of mechanical noises from tappets, valves, etc. By completely enclosing the engine, without cooling being affected, much is being done to lessen these noises. Reduction gears again are a fruitful source of noise on both air and water-cooled engines. Concentric gears, whilst showing a great improvement on the usual type of spur gear can be considerably improved by finer grinding.

**Airscrew Noises.**—Here is presented a problem somewhat difficult of solution, for it must be remembered that the average tip speed of a 10-foot airscrew is between 700 and 800 m.p.h., and owing to this high speed, tip flutter is created with its resultant noise. Metal airscrews go a long way to eradicate this evil, but are not completely successful.

**Exhaust Noises.**—Last and most noisy of all come exhaust noises. Standing near the open-ended tail pipe of a supercharged " 500 " the " crack " of an efficient engine of

this type makes one's diaphragm violently oscillate and the effect does not wear off for hours.

What, then, are the particular considerations involved in constructing an efficient silencer ? Briefly they boil down to this—Weight, volume, efficiency, silence.

**Weight.**—Taking a 100-h.p. engine running at 2,500 r.p.m., for the purpose of argument, what possible increase of weight of silencer would be permissible in order adequately to silence such an output ? Personally, I do not consider that the ideal silencer should increase the load by so much as an ounce, because most aeroplanes possess long tail pipes which to a certain extent would be replaced by the silencing arrangement.

**Volume.**—The ideal silencer should not exceed the diameter of the tail pipe fitted in view of head resistance (the bugbear of chief designers) nor be more than 5 to 6 ft. in length ; less if possible.

**Efficiency.**—Taking 0.5 lbs. pressure as representing the normal back pressure in the open-ended tail pipe, obviously the ideal silencer must not exceed this figure, as the loss of even 15 to 20 revs. at the peak means the difference between 98 and 100 m.p.h. Also, these few revs. mean quite a lot when leaving the ground, or in an emergency. Most silencers depend on some form of baffle or deflection to achieve their purpose, in my opinion this is working on the wrong lines, as any impediment to the free flow of the exhaust gases must inevitably set up back pressure.

**Silence.**—What constitutes silence ? It is not easy to say what degree of silence should be obtained. Usually, if the exhaust is silenced below the mechanical noises of the engine this is considered quite enough. The main object should be to eliminate the beat. It is the intensity of noise that matters, not so much the volume.





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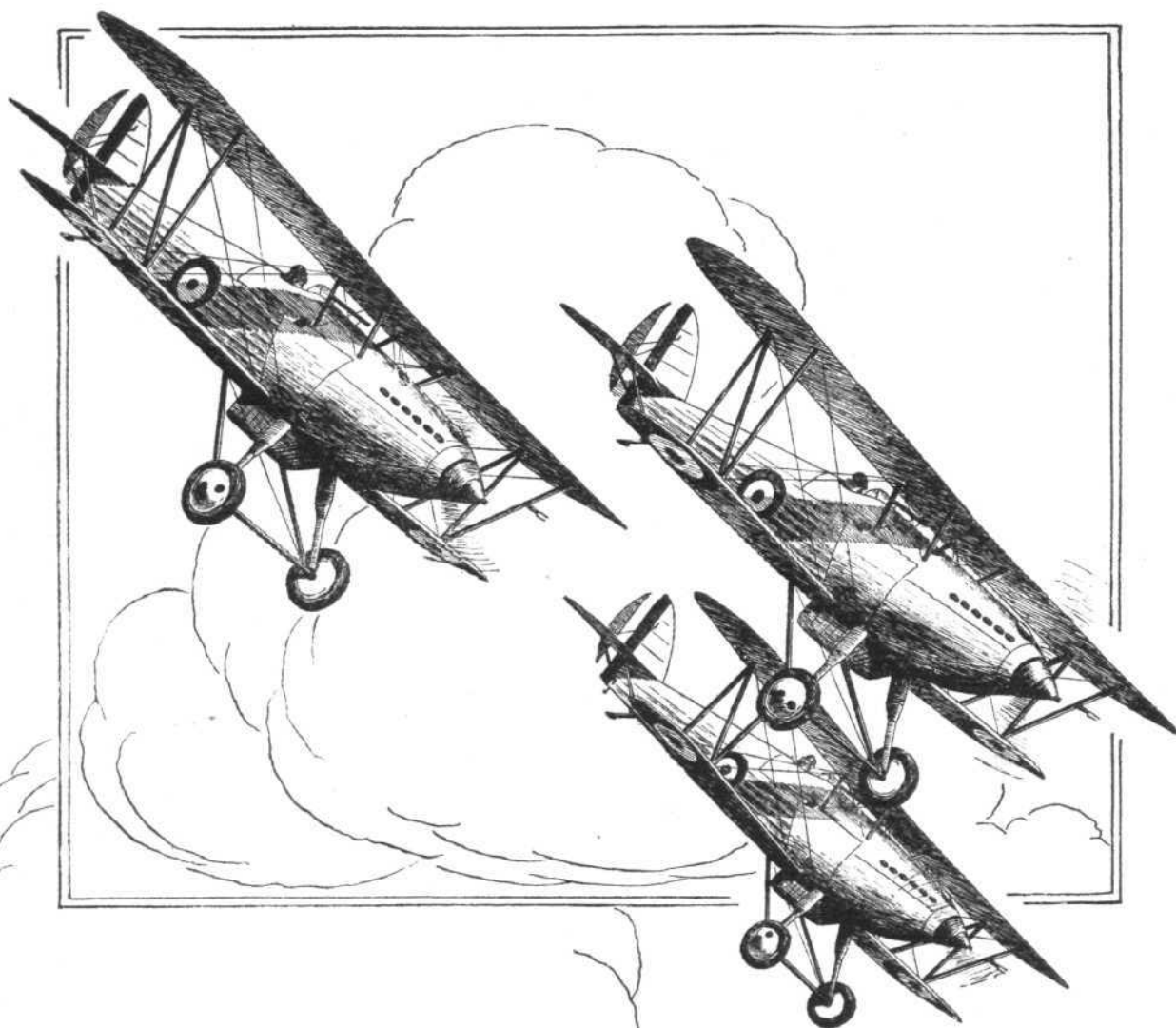
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# PRIVATE FLYING AND CLUB NEWS

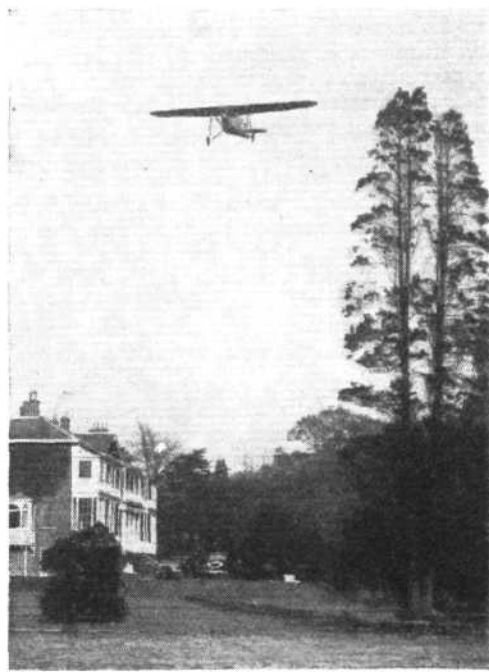
**M**R. PARKHOUSE has evidently incurred the displeasure of the clerk of the weather who did not bless his meeting last Saturday. The morning turned out with low clouds and general murkiness and Mr. Parkhouse thought it wiser to wire those who had promised to come that the conditions were not favourable, however that indefatigable worker in the cause of private flying, "Tommy" Rose, managed to get through on "Sam," the Pratt's Cirrus-Moth, and during the afternoon he and Mr. Parkhouse took up spectators for free joy-rides. A good contingent from the Plymouth Club, to wit, Mr. Deane, the chairman of the flying committee, Mr. Bezley the chairman of the club, Mr. Roberts, the secretary of the club and Mr. Sholbrook a member, came over by road, and lent their support and during the evening all enjoyed themselves at the subsequent dance which Mr. Parkhouse had arranged; he had even engaged two experts, Eve and Ramon, to give exhibition dances and we hope that his enterprise will be better favoured the next time.

**H**ANWORTH CLUB bids fair to justify its existence. Since August 31, 35 "A" licences have been secured and 53 members have got to the solo stage, and in the past 11 weeks, 1,446 flying hours have been put in and the total membership now exceeds 600. The Hull Club since being started by N. F. S., have put in 87 hrs. in their first month. The Nottingham Club, 45 hrs. in October, and the Berks, Bucks & Oxon. 81 hrs., from September 23 to the end of October, and the Yorkshire Club 80 hrs. from October 15 to November 12. The N.F.S. fleet of 25 machines have now completed 2,250 hrs. since their beginning without any accidents to any pupils. The new Desoutter "Sports Coupe" is being demonstrated at Hanworth during the coming week-end.

**T**HE ISLE OF WIGHT may soon have a flying club if the meeting recently held at the Guildhall, Newport, bears fruit. Inland Flying Services, who run the flying at Apse Aerodrome, seem to be the prime movers. We hope they do.



Left: Capt. the Hon. J. B. Rodney, M.C., in whose charge Hanworth Club is flourishing. (FLIGHT Photo.)

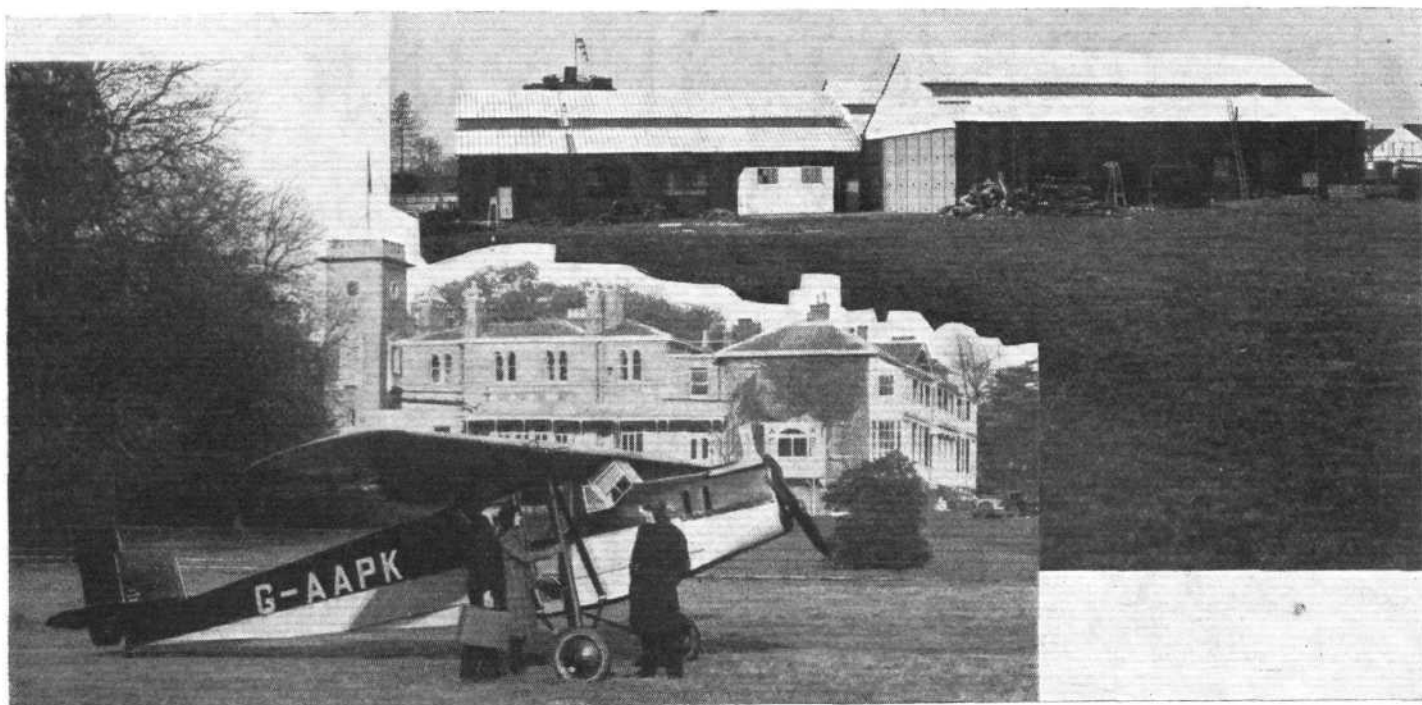


Right: One of the "taxis" returning home. A Desoutter - Hermes over Hanworth. (FLIGHT Photo.)



Hanworth Park from the south side, showing the club house and hangars. (FLIGHT Photo.)





Above are the new workshops which will cater for the needs of the whole of the N.F.S. organisation. Below, two passengers about to "enplane" in one of the new Desoutter cabin machines (with Cirrus "Hermes" engines), which N.F.S. have standardised on their taxi-service. (FLIGHT Photos.)

**HALTON AERO CLUB** will be having a visit to the National Physical Laboratory at Teddington, on November 27, which will be limited to 30 members, starting at 1 p.m. On the 28th, Mr. Tallyn will be lecturing on the Napier Lion engine, and during December there will be a lecture on R.101. The membership of this club is steadily growing and has now passed the 1,000.

**HENLY'S** are now official agents for Avians and Moths and are starting an aerodrome at Addington, near Croydon, where they will provide flying tuition and service for the machines they sell. They will also accept other machines or even cars in part exchange, and deferred payments can be arranged, just as they have done for cars at Devonshire House, in Piccadilly.

**SEAPLANES** in Sarawak have proved eminently suitable for Government service where they have been used for patrolling and other work. The country is covered with disused mines, which are in most cases flooded and provide very good landing for the Gipsy Moths, of which they have two.

**THE PARKS AIRPORT**, Illinois, U.S.A., held an aeroplane race last Sunday. A cash prize was given for the winner, and, being a prohibition country, a *loving cup* was the second prize!

**AN** Indian flight will shortly be made by an Indian, Mr. Y. V. Ghatge, on a Gipsy Moth. This machine has been completely equipped and all special arrangements made for the trip by that very live firm Malcolm Campbell, Ltd., of St. James's St., London, S.W.1, who, amongst other things, have ensured that adequate supplies will be available at the necessary points throughout the trip.

**THE SINGAPORE CLUB** managed to get in 43 hrs. 23 mins. flying time for the month of September, in spite of the contrariness of the weather which generally meant that when the sea was calm enough the wind wasn't, and *vice versa*. They have both their machines in commission now and are steadily going ahead.

**YOUNG STRIBLING**, the American heavy-weight boxer, is also a private owner, and the other day he went down to Croydon and took his mother and father for a half an hour's flight over London in a Desoutter "Sports coupé." He said that he liked the machine very much. The 'bus he flew was one of the new models with a Cirrus-Hermes engine, as is now standard, and gives a cruising speed of 98 m.p.h.

**READING AERODROME** is reported as undergoing extensions and alterations which will make it into a large airport. Extra hangars, an hotel and club-house, and a fleet of 200 machines for taxi work are mentioned, and it is said that the Prince of Wales has been invited to open it when complete.

**AN INTERESTING** competition took place recently at Rome organised by the Italian Royal Aero Club. The course to be flown was over the Lazio, and competitors had to cover a triangular circuit seven times. Thirteen light aeroplanes were entered, including two Caproni Ca. 100's, both fitted with Gipsy engines. These were piloted by Major Mario de Bernardi, late holder of the world's speed record, and Capt. Camna. The superiority of Maj. de Bernardi and his machine soon became evident, but at the conclusion of the race he was, unfortunately, disqualified for a slight error in one circuit. The first prize thereupon went to Capt. Camna on the other Gipsy-engined Ca. 100, who completed the seven laps, each about seven miles in length, in 35 mins. 5½ secs. Two Fiat "A.S. 1's" were second and third, and a "Romeo Ro. 5" was fourth.

## ◆ ◆ ◆ ◆ GUILD OF AIR PILOTS

FOLLOWING on the report of the inaugural dinner of the Guild of Air Pilots and Air Navigators of the British Empire, which we reported in a recent issue, we have now heard from the Clerk to the Guild that he is in a position to receive applications for membership, and inquiry should be made of L. A. Wingfield, Esq., Guild of Air Pilots and Air Navigators of the British Empire, 61, Cheapside, London, E.C.2.

Membership of the Guild is open to certificated air pilots and air navigators who are British subjects, whether resident

at home or abroad, and who are Master Pilots, or have been for not less than five years the holders of a "B" pilot's licence, or first-class airship pilot's licence, or a certificate of competency as a first-class navigator of commercial aircraft.

During the first year of the Guild's existence, however, the five years' qualification will be waived, and the Court have a discretion as to whom they elect.

Early application is therefore desirable.

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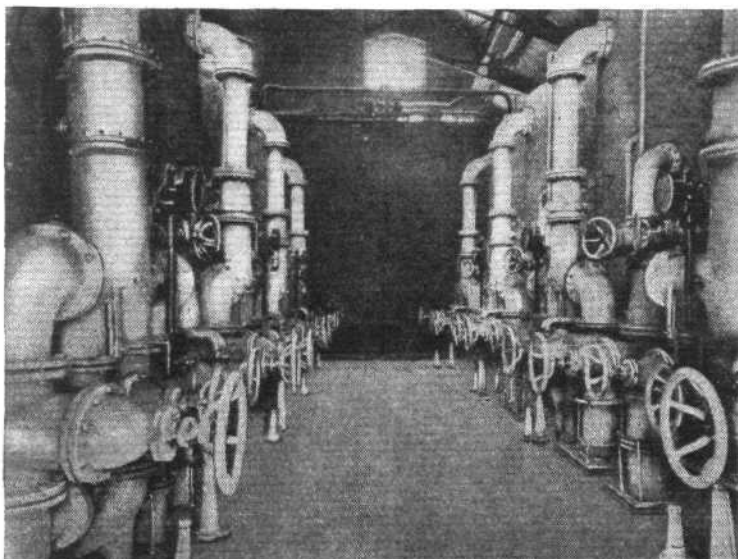
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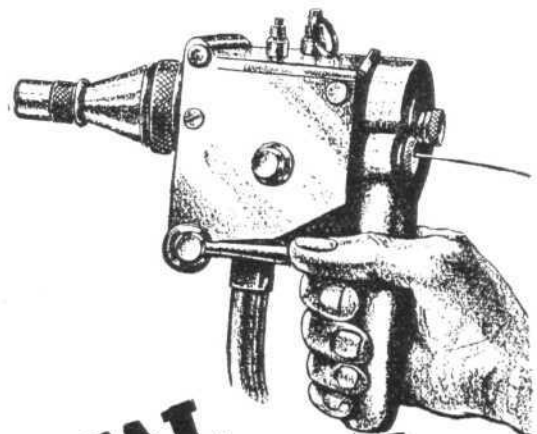
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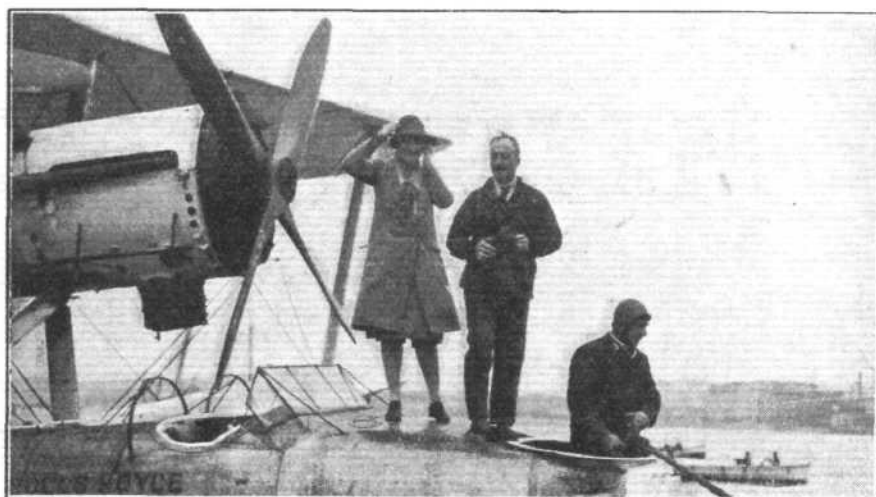


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## R.101's FINE FLIGHT

OWING to unfavourable weather last Saturday—low clouds and high winds—the proposed flight of R.101 with 20 members of the House of Lords and 80 members of the House of Commons, and other passengers (which would have totalled between 170–180 people) had to be postponed at the last minute. Members turned up at the House ready for their trip, and some disappointment was caused when the Air Ministry announced that the flight

took up the mooring cable at 3.50 p.m., mooring operations being completed at 4.40 p.m. Thirty-two passengers were carried, including a number of Air Ministry and research officials.

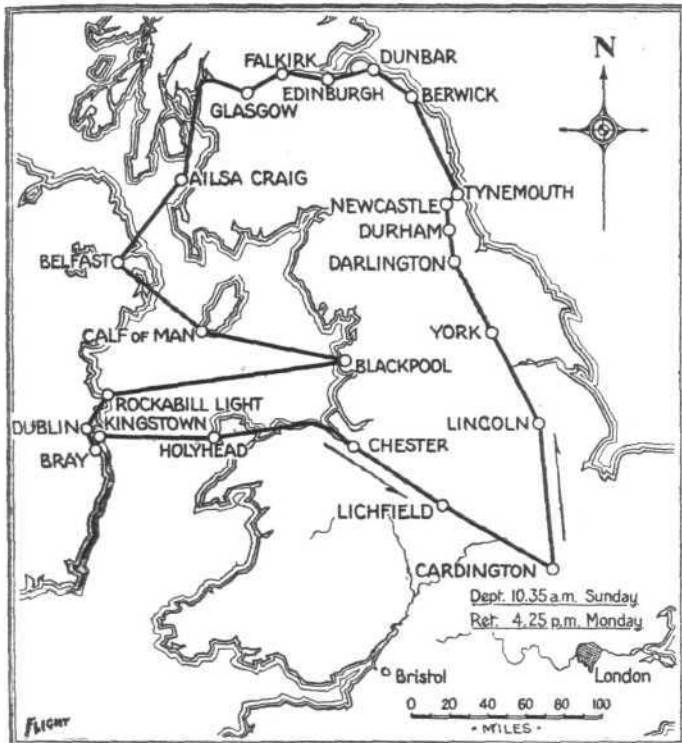
On November 17–18 the R.101 made a magnificent flight of over 30 hours' duration—the longest she has yet made—during which she flew over England, Scotland, Ireland and Wales. The log of the flight was as follows:—*Sunday, November 17*: 10.35 a.m.—Left mooring tower at Cardington; 1 p.m.—Over Scampton, near Lincoln; 4 p.m.—Durham-Newcastle-Tynemouth; 6 p.m.—Berwick-Dunbar-Edinburgh; 8 p.m.—Glasgow-Firth of Clyde; 9.15 p.m.—Ailsa Craig-Belfast. *Monday, November 18*: 1 a.m.—Off Isle of Man; 4 a.m.—Blackpool; 8.15 a.m.—Dublin-Kings-town; 10 a.m.—Holyhead; 11 a.m.—Llandudno-Chester; 1 p.m.—Lichfield; 4.25 p.m.—Cardington. Over Scotland very bumpy weather was encountered. Between the Isle of Man and Blackpool extensive turning trials were carried out. On reaching the English coast on the homeward journey fog was encountered, which became thicker over the Midlands. At Rugby, only the tops of the great 800-ft. wireless masts could be seen above the fog. In spite of the mist at Cardington, the mooring ropes were successfully picked up, and the R.101 was locked home on the mast in 45 minutes.

Later, in a statement to a Press representative, Major Scott said:—

"The R.101 behaved splendidly. She has finished her acceptance tests, and any further trials will now be for our information. We set out to go through certain turning tests—that is, measuring bends at different angles of the rudder. The airship passed these admirably.

We flew at an average speed of about 60 miles an hour. We had fuel on board to last for at least another 36 hours' flight. The fog gave us no trouble at all, except slightly to curtail our trip. We did not want to land in the fog and darkness, so we decided to return sooner than we first thought.

We all had plenty of sleep, and a very good meal at mid-day to-day. The meal consisted of soup, roast chicken and bacon, castle pudding, cheese, and coffee. It is far colder here than it was in the air. We saw the people in Glasgow and Edinburgh quite distinctly, and also leaving Belfast. We seemed to create quite a stir when passing over the towns. We flew at an altitude of between 1,000 and 1,500 feet. Our positions and directions were picked up by wireless from the ground. We ran into a few rainy patches, but there was nothing serious. I went to bed at midnight, when the ship was in charge of Flight-Lieut. Irwin."



Sketch map of the course followed by R.101 during her 30-hour cruise.

was "off." Weather conditions being favourable, the flight will be made next Saturday.

The R.101 went for a short instructional cruise over Bedfordshire and the neighbouring counties, on Thursday afternoon (November 14). She left the mooring tower at Cardington at 1.54 p.m., and, after passing over Bedford,



**CONSOLIDATED:** The Type PY-1 "Admiral" monoplane flying-boat, fitted with two 450-h.p. Pratt and Whitney "Wasp" engines, constructed by the Consolidated Aircraft Corporation of Buffalo, N.Y. A similar machine, a 22-seater commercial model (type "Commodore"), was recently delivered to the New York and Rio and Buenos Aires Line, Inc., for operation on the air service between New York and Buenos Aires. It formed the first of a batch of 12 ordered, and was named "Buenos Aires," by Mrs. H. Hoover. The commercial models are equipped with 500-h.p. Pratt and Whitney "Hornet" engines.

# AIRISMS FROM THE FOUR WINDS

## Mr. Tuckett's Escape.

MR. ROY TUCKETT, who is on a flight from Croydon to Cape Town, left Athens at 6.45 a.m. on November 18. When crossing the Mediterranean, an oil-pipe split, but he arrived on the African coast. He effected temporary repairs and struggled to Alexandria, arriving at 6 p.m. on the same day.

## Mr. Campbell Black Arrives in Kenya.

THE *Knight of the Grail*, which left Croydon on October 24, on a flight to Kenya Colony, arrived at Nairobi on Monday, November 11.

## Parachute and Rubber Boat.

AN officer at the training station, Newport, R.I., U.S.A., descending by parachute from an aeroplane into the bay, on November 12, reached the water in a rubber boat which he carried with him.

At the height of 2,000 ft. he jumped and released the parachute immediately. When he had descended 300 ft. he released the valve of a compressed air tank he carried, inflating the rubber lifeboat he had strapped about him. He fell into the bay sitting in the boat.

## Cowes as an Airport.

THERE is a probability of Cowes becoming an airport. The project, which has the support of the district council, is in the hands of Messrs. Saunders-Roe. They have applied to the Commissioners of Customs for the recognition of Cowes as a Customs port for seaplanes. In the event of the application being granted, the firm contemplate developments which would greatly increase the passenger flights to and from Cowes.

## Weather Reports for Aircraft

WHAT is believed to be the first daily flying weather forecast in the history of American aviation for public

information, has been inaugurated for the newspapers in its territory by the publicity department of the Curtiss-Grand Air Terminal, at Glendale, California, by courtesy of the United States Weather Bureau at this base. A complete report, especially compiled for the guidance of pilots and prospective air travellers, will be supplied to the newspapers twice daily. The forecasts will describe prevailing atmospheric conditions between Los Angeles and the following ports: San Francisco; Reno, Nevada; Salt Lake City, Utah; Clovis, New Mexico; and San Diego.

## French Airmail Mishap

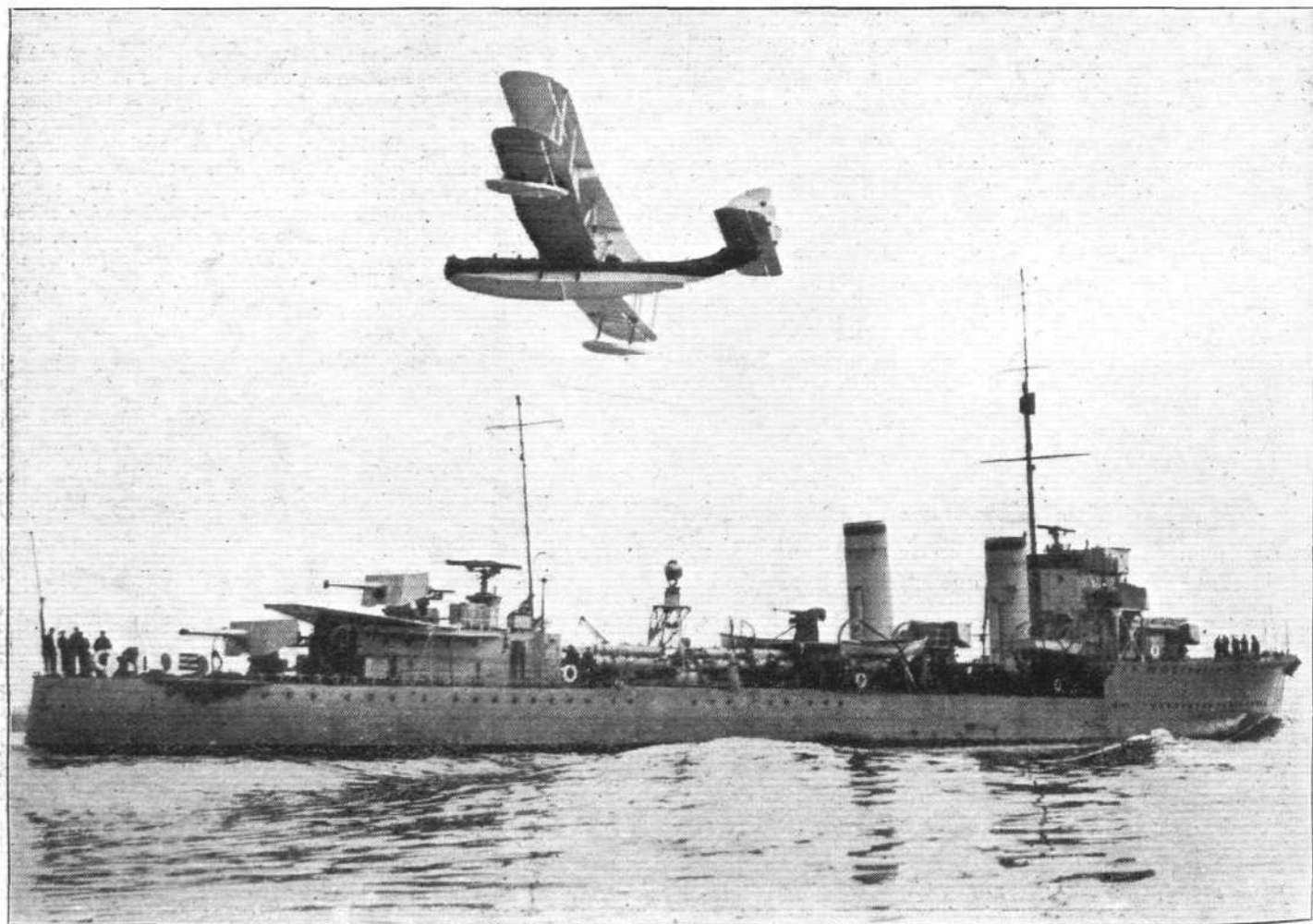
A FRENCH air mail seaplane was forced down on to the sea near Corsica, on November 13, but the crew were saved by an Italian ship.

## F./O. Thorn Joins Cirrus

FLYING OFFICER S. A. THORN, late of the Royal Aircraft Establishment, Farnborough, has joined Cirrus Aero-Engines, Ltd., as Test Pilot. F./O. Thorn joined the R.A.F. on September 21, 1925, and was posted to Sealand for flying training. On August 17, 1926, he was posted to No. 17 Squadron, and later he joined the R.A.E., where he has remained up to now. He was an enthusiastic member of the R.A.E. Light Aeroplane Club, which he represented at most of the flying meetings during the past year.

## Northolt Air Station. Photos Wanted

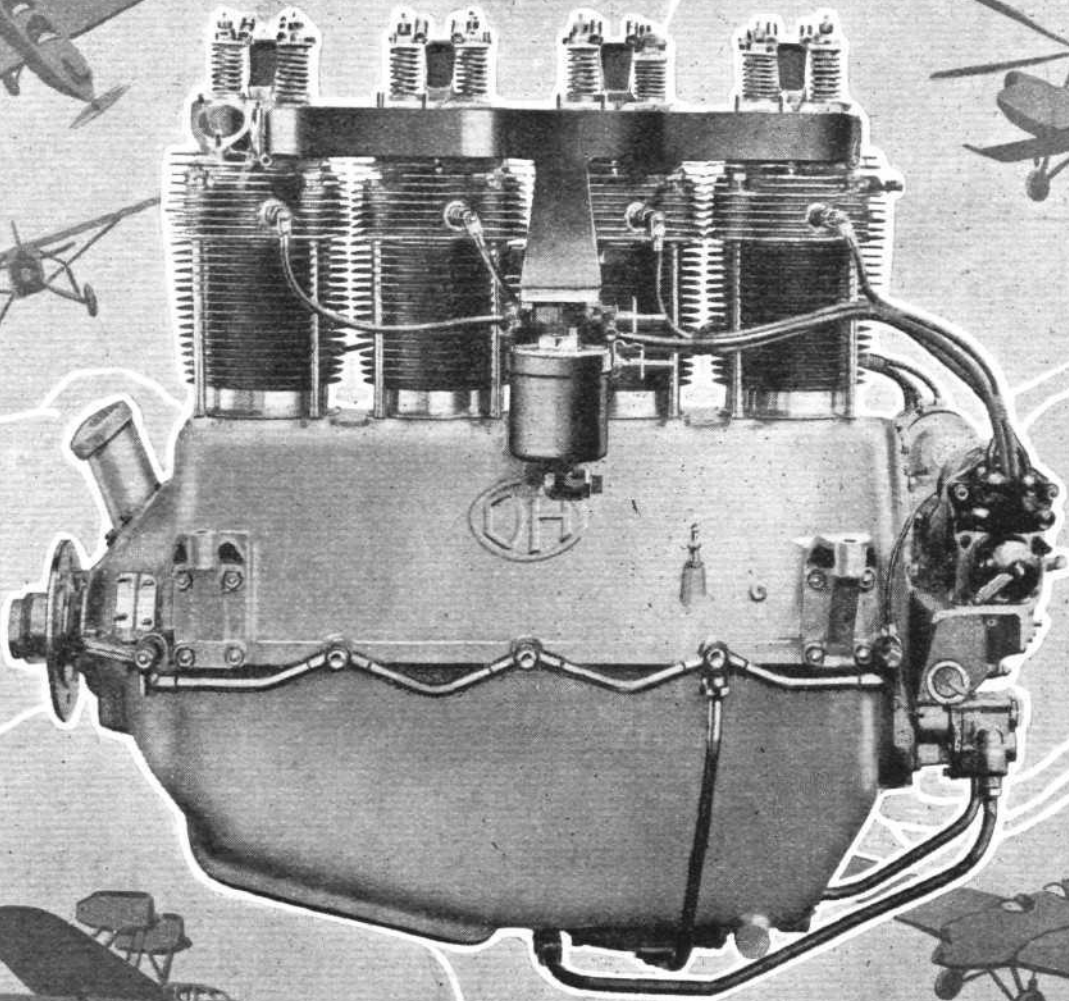
THE Officer Commanding, R.A.F. Station, Northolt, is anxious to obtain copies of photographs of groups of officers (or officers and airmen) who have been stationed at Northolt Aerodrome during or since the war. Would anyone in possession of such photographs kindly communicate direct with the Officer Commanding, R.A.F. Station, Northolt Junction, Ruislip, Middlesex?



**FOR THE ARGENTINE :** The Torpedo Boat Destroyer Flotilla Leader "Mendoza," built to the order of the Argentine Government by J. Samuel White and Co., Ltd., Cowes, and one of the "Southampton" twin-engined (Lorraine) flying-boats built by the Supermarine Aviation Works, Ltd., Southampton, also for the Argentine Government. On her official trials the "Mendoza" attained a mean speed of 38.93 knots—a record speed for a vessel of her class.



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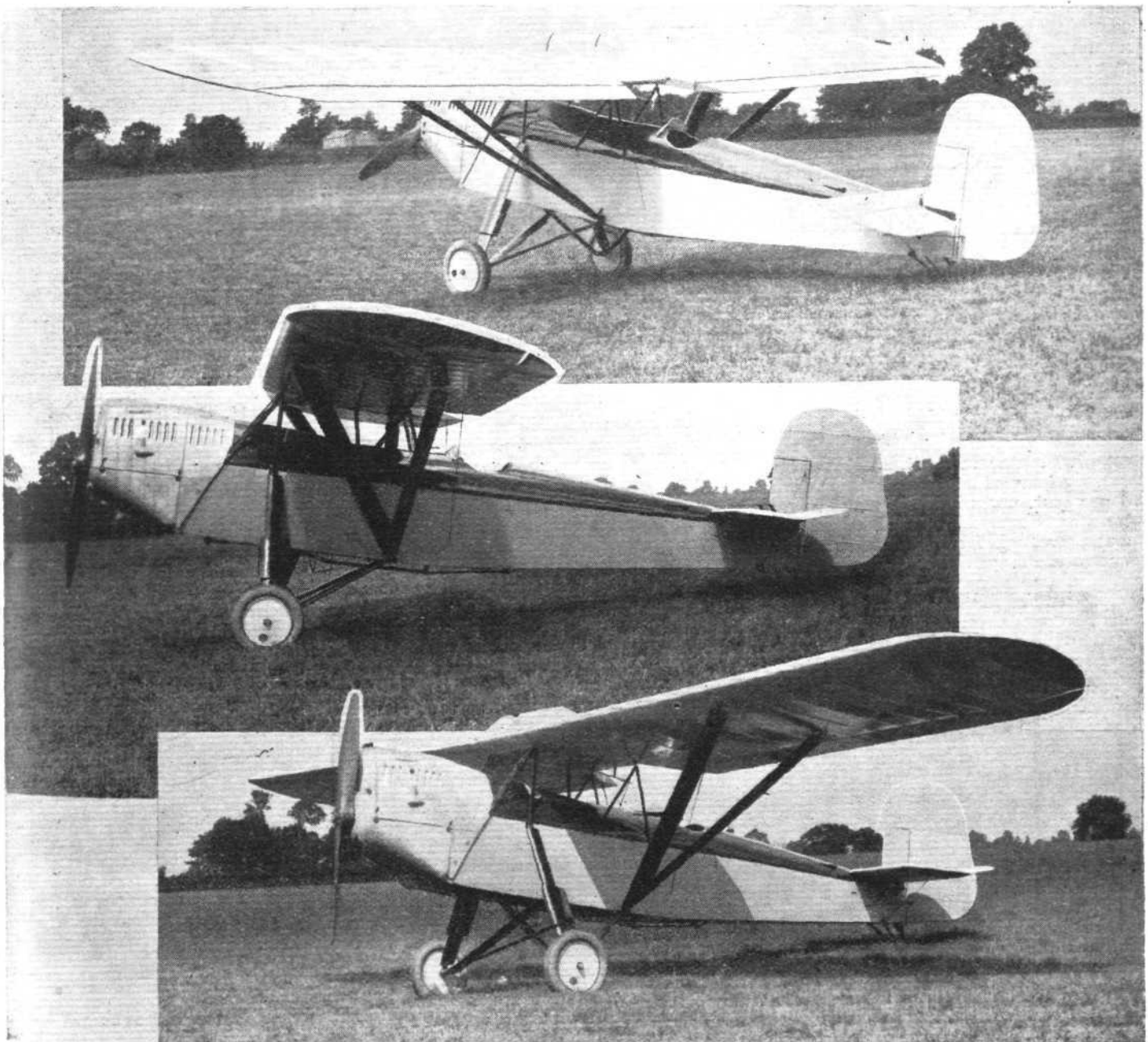
## WESTLAND "HERMES-WIDGEON"

REFERENCE has already been made in FLIGHT to the fact that, owing to pressure of work on a large number of "Wapiti" machines, the Westland Aircraft Works, of Yeovil, have decided to dispose of the production rights of the "Widgeon" monoplane.

This machine has been produced fitted with any of a number of different engines. The accompanying photographs show the "Cirrus-Hermes"-engined version, which has a very excellent performance (top speed about 117 m.p.h.)

The very neat cowling will be noted, as well as the divided undercarriage. Future machines will be built entirely in metal, a simple form of construction having already been evolved.

In view of the "boom" in aviation, which is expected to start next spring in real earnest, the "Widgeon" offers a good opportunity for a new company to acquire the accumulated experience of an old-established firm, in addition to the complete working drawings, etc.





# The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

REPORT of meeting of the Committee of the Royal Aero Club, held at 3, Clifford Street, London, W.1, on Wednesday, November 13, 1929, at 5 p.m.

*Present.*—Lieut.-Col. M. O'Gorman, C.B., in the chair; Griffith Brewer; Lieut.-Col. M. O. Darby, O.B.E.; Lieut.-Col. Sir Francis K. McClean, A.F.C.; Lieut.-Col. J. T. C. Moore-Brabazon, M.C.; Maj. H. A. Petre, D.S.O., M.C.; Capt. C. B. Wilson, M.C.; H. E. Perrin, Secretary; B. Stevenson, Assistant Secretary.

*Election of Members.*—The following new members were elected: Arthur Leslie Chick, Percy Jack Clayton, Peter Thorp Eckersley, William Scott Farren, Leonard James Hill, William Richard Parkhouse, Percy Pitt, Flight-Lieut. George Thomas Richardson, W. J. Walter, and Henry Herman Evelyn Montagu Winch.

*Aviator's Certificates.*—

- 8828 Edmund Paul Kohn-Speyer, Henderson Fl. School
- 8829 John Bosanquet Phelps, Norfolk & Norwich Ae. C.
- 8830 Francis Francis, De Havilland Fl. School
- 8831 Jonathan W. B. Robinson, National Fl. Services
- 8832 Kurd Peters, National Fl. Services
- 8833 Roderick P. G. Denman, Airwork Fl. School
- 8834 Duncan Sinclair, Airwork Fl. School
- 8835 Henry Cockburn G. H. Stisted, Hampshire Ae. C.
- 8836 Ivor Thomas P. Hughes, National Fl. Services
- 8837 Alexander McGregor Holmes, Scottish Fl. C.
- 8838 Alastair Frow Wallace, Scottish Fl. C.
- 8839 Robert Harley Weston, Scottish Fl. C.
- 8840 William Edward Illingworth, Yorkshire Ae. C.
- 8841 Charles Owen Flemmich, Airwork Fl. School
- 8842 A. Hamilton Gault, De Havilland Fl. School
- 8843 Roger Frogley, National Fl. Services
- 8844 William Forester Pharazyn, National Fl. Services
- 8845 Alexander P. B. Walter, Scottish Fl. C.
- 8846 Archibald Glen, Scottish Fl. C.
- 8847 Ronald Buckland Waters, Henderson Fl. School
- 8848 Henry Calvert, Cinque Ports Fl. C.
- 8849 Cosmo Gordon Stuart, Airwork Fl. School
- 8850 Leslie Charteris, Suffolk & Eastern Counties Ae. C.
- 8851 Cyril Pendennis Allinson, Hampshire Ae. C.
- 8852 Leslie Leonard Milton, Cinque Ports Fl. C.
- 8853 James Kouchenius Brownell, Hampshire Ae. C.
- 8854 William S. F. Johnson, National Fl. Services
- 8855 Percy Dalton Wright, London Ae. C.
- 8856 Basil Hugh Brooke, National Fl. Services.

- 8857 Eric Harold Buxton, Brooklands Fl. School.
- 8858 Miss Mary A. G. Stanford, De Havilland Fl. School
- 8859 William H. C. Blake, Hampshire Ae. C.
- 8860 Jack Courtenay Green, Cinque Ports Fl. C.
- 8861 Arthur H. W. Fleming, National Fl. Services.
- 8862 William Bernard Medcraft, Leicestershire Ae. C.
- 8863 Harry Elliot Fairley, Scottish Fl. C.
- 8864 John Macgregor McGuffie, Brooklands Fl. School
- 8865 Randle K. L. S. Mainwaring, Brooklands Fl. School
- 8866 Lawrence Monck Middleton, Newcastle Ae. C.
- 8867 Henry S. J. Streatfield, De Havilland Fl. School
- 8868 William Monteith Crabbie, Scottish Fl. School
- 8869 Percival H. G. James, Bristol & Wessex Ae. C.
- 8870 The Hon. George Edward Dutton, Bristol & Wessex Ae. C.
- 8871 Mrs. Mary Margaret Carter, London Ae. C.
- 8872 Desmond C. J. Miller, Airwork Fl. School
- 8873 Frank Arthur, London Ae. C.
- 8874 Vincent Lockey, Yorkshire Ae. C.
- 8875 Walter Retlaw Westhead, Airwork Fl. School
- 8876 Percy Thomas Capon, Hampshire Ae. C.
- 8877 William Arthur Richardson, Berks, Bucks & Oxon Ae. C.
- 8878 Lord Apsley, Bristol & Wessex Ae. C.
- 8879 Ronald Ord C. Thomson, Cinque Ports Fl. C.
- 8880 Sir Robert Alan Clayton East, Hampshire Ae. C.
- 8881 William Geoffrey Ellis, Yorkshire Ae. C.
- 8882 George Donald Mallinson, Yorkshire Ae. C.
- 8883 Colin John Fryer, Philips & Powis Fl. School
- 8884 William Aspinall Turner, Cinque Ports Fl. C.
- 8885 Iain McWilliam, Scottish Fl. C.
- 8886 Alexander R. Leslie-Melville, Royal Air Force, Leuchars.

*Committee Vacancies.*—The following members were co-opted to fill the vacancies on the Club Committee: Capt. H. S. Broad, Maj. C. J. W. Darwin, Maj. A. R. Goodfellow, A. H. Downes-Shaw.

The following matters were also considered by the Committee:—Schneider Contest, 1931; King's Cup Race, 1930; Aerial Derby, 1930; Municipal Air Ports; Guild of Air Pilots.

Offices: THE ROYAL AERO CLUB  
3, CLIFFORD STREET, LONDON, W.1.  
H. E. PERRIN, Secretary

## Glenn L. Martin (U.S.A.) Extends

AN issue of \$3,000,000 (£600,000) convertible five-year 6 per cent. notes is to be made this week, it is announced, by a banking syndicate headed by Otis & Co., of New York and Cleveland, for the Glenn L. Martin Company, which is one of the largest producers of aircraft for the U.S. Govern-

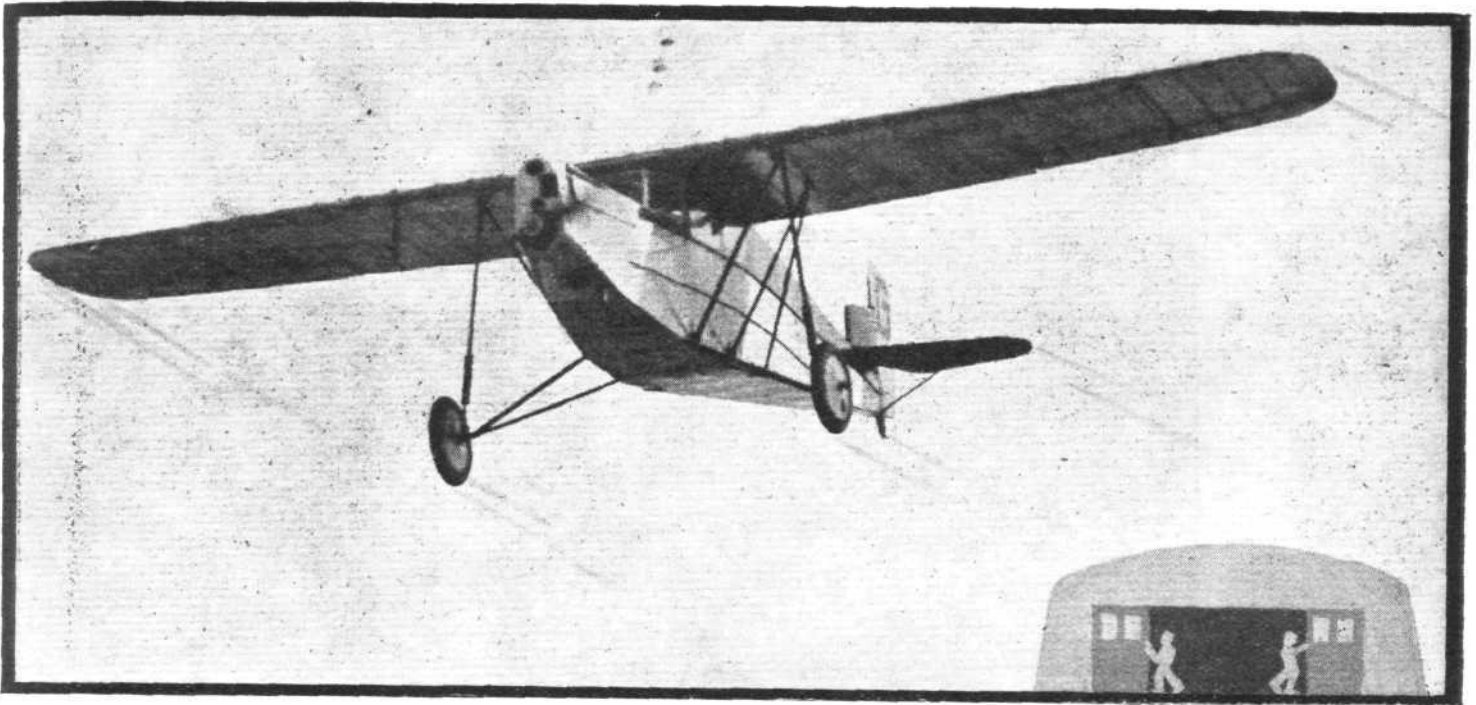
ment, and manufacturers of the "Martin bomber." The issue, which constitutes the first public financing for this firm, foreshadows important developments in the field of commercial aviation into which the company intends to enter on an extensive scale. The company, at present, chiefly manufactures flying-boats for the United States Navy.



NEW WINE IN OLD BOTTLES: A Handley Page biplane which has been fitted with Rolls-Royce "F" type engines. (Flight Photo.)



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## THE HERMES-DESOUTTER

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**S**ALOON comfort for pilot and two passengers. A cruising speed of 98 m.p.h. Perfect visibility. Practically unstallable. In no other 'plane but the Desoutter can you get such performance and comfort at the price. It costs very little more to buy, and less to maintain, than an ordinary two-seater light aeroplane, but how much more pleasurable for three to fly—and converse freely—in the comfort of a fully enclosed cabin.

**T**HE Cirrus-Hermes engine has been standardised for the Desoutter Sports Coupé. This, in itself, is sufficient guarantee as regards the reliability of the power plant.

#### SHORT SPECIFICATION:

Span	...	...	...	36 ft.
Length	...	...	...	27 ft.
Height	...	...	...	7 ft.
Weight	...	...	...	980 lbs.
Loaded Weight	...	...	...	1,730 lbs.
Fuel capacity	...	...	...	21 gallons
Wheel track	...	...	...	10 ft. 6 in.
Maximum speed	...	...	...	112 m.p.h.
Climb to 4,000 feet with full load (1,800 lbs.)	...	...	...	6 mins. 1 sec.

PRICE: With "Cirrus-Hermes" £795.

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#### DEMONSTRATION FLIGHTS.

National Flying Services Ltd. will give demonstration flights with the new Desoutter 3-seater Cabin Monoplane (fitted with Cirrus-Hermes engine) at the London Air Park, Hanworth, on the afternoons of November 22nd, 23rd and 24th, from 2 p.m. (weather permitting). Those interested are invited to write or telephone for an appointment.

#### IMMEDIATE DELIVERIES.

**The Desoutter has been adopted by National Flying Services Ltd. as one of their standard types and they are in a position to offer immediate deliveries.**

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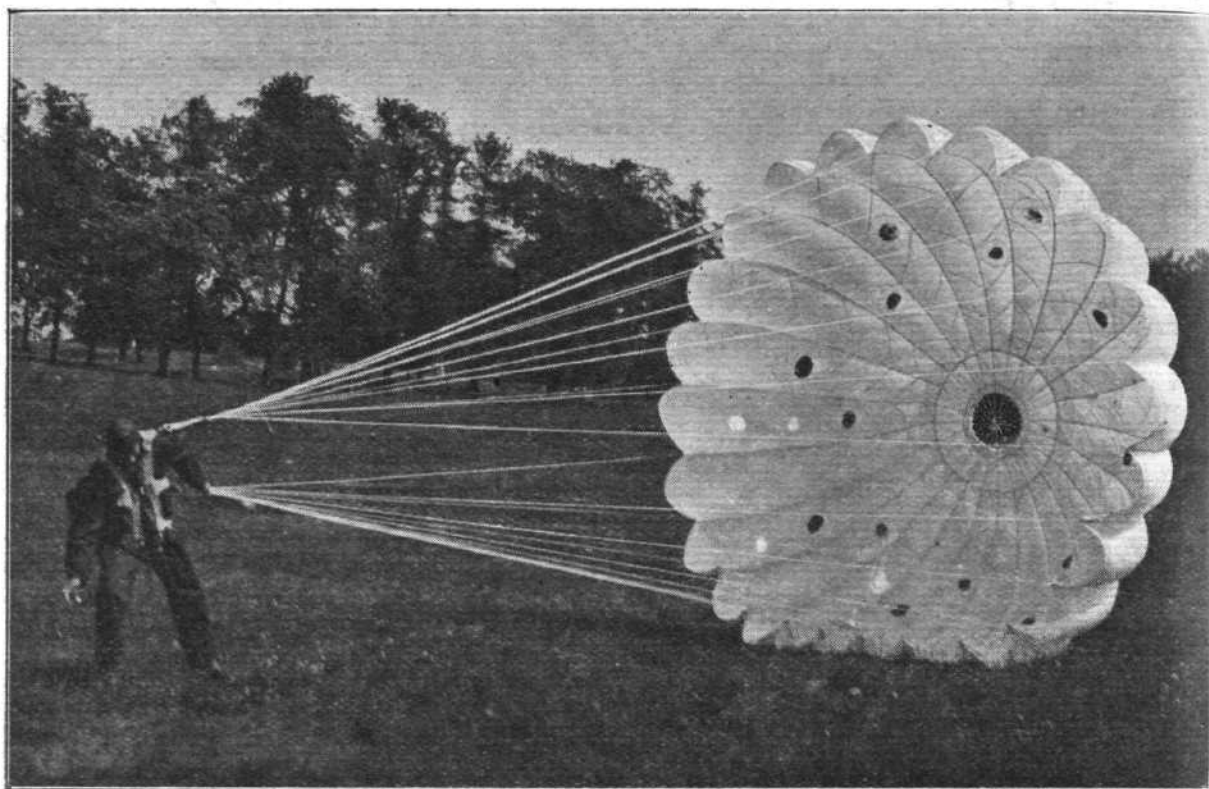
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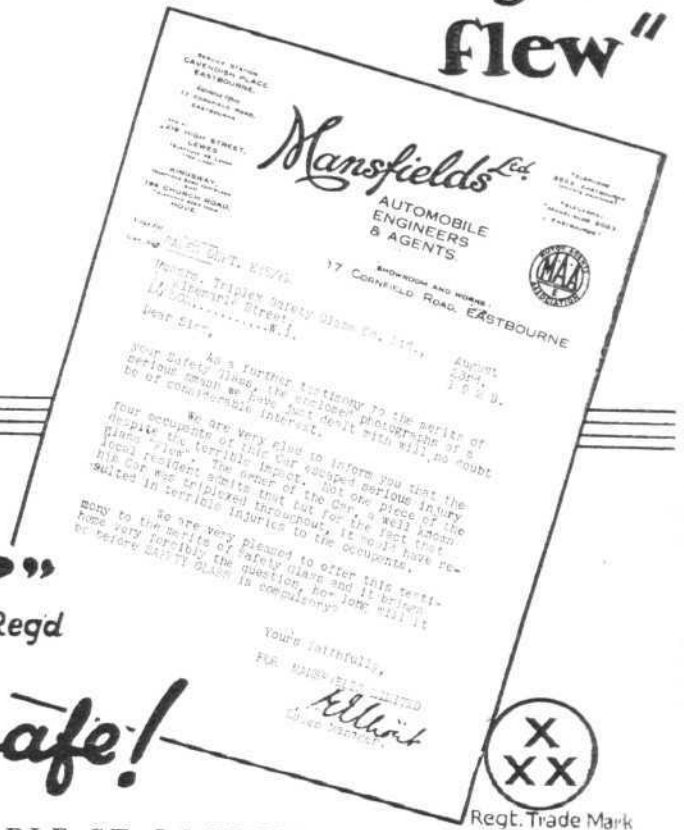
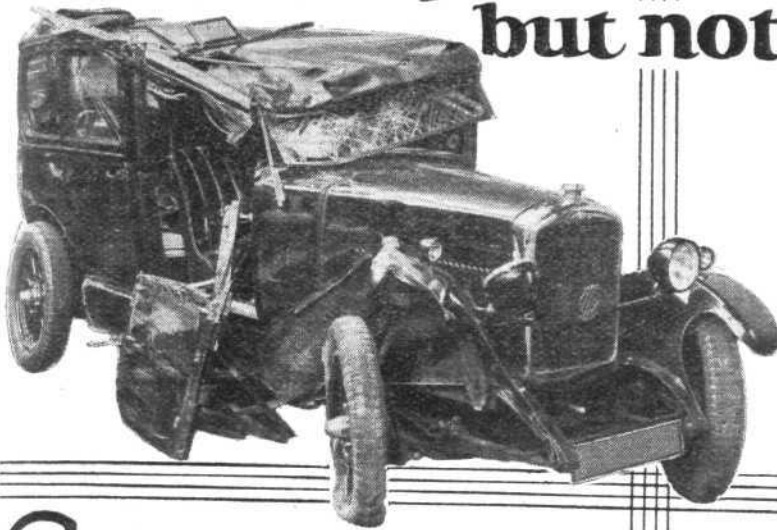
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Air Ministry Report on the  
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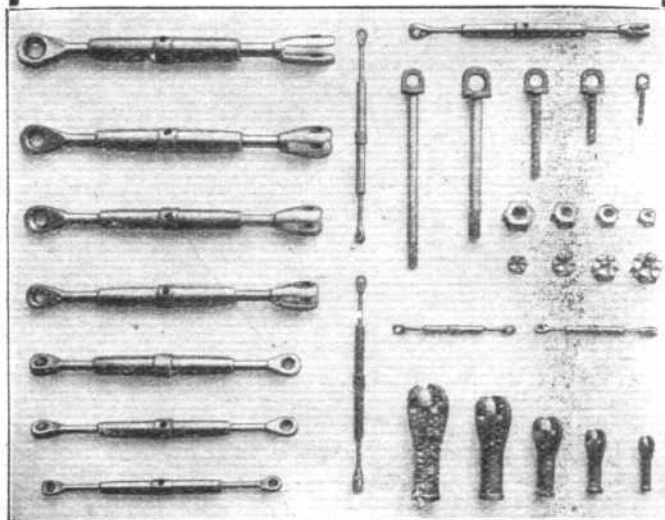
The whole of the Stainless Steel Strip used in the Construction of the Framework of the R 101 was supplied by

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# THE ROYAL AIR FORCE

London Gazette, November 12, 1929

## General Duties Branch

P. F. Canning is granted a short service commn. as Pilot Officer on probation, with effect from and with seniority of Oct. 21.

The follg. Pilot Officers are promoted to rank of Flying Officer:—F. C. G. Freeman, A. J. P. Groom, A. D. Jaffe, G. E. F. Proctor (Oct. 8); D. A. L. Campbell, P. Le M. C. Deacon, J. W. Hawke, H. J. A. Williams (Oct. 13); F. R. Ballfour (with seniority of Oct. 13), Oct. 18.

The follg. are promoted with effect from Oct. 13:—*Flight Lieutenants to be Squadron Leaders*.—E. B. Grenfell, A.F.C., P. F. Fullard, D.S.O., M.C., A.F.C., H. O. Long, D.S.O., V. R. Gibbs, D.S.C., C. E. W. Lockyer, V. Buxton, O.B.E., H. B. Russell, A.F.C. *Flying Officers to be Flight Lieutenants*.—E. A. Healy, F. E. Nuttall, V. Harris, A. W. B. McDonald, H. F. Jenkins, L. W. Dickens, D. A. Boyle, R. L. R. Atcherley, H. R. D. Waghorn, A.F.C., J. M. Cohn, G. B. M. Rhind, R. P. P. Pope, D.F.C., J. H. Powle, J. H. Sender, J. L. F. Fuller-Good.

Flight Lt. G. H. Du Boulay is placed on retired list at his own request (Nov. 1). Flying Officer H. T. Satterford is placed on retired list on account of ill-health, and is granted permission to retain the rank of Flight Lt. (Oct. 1). (Substituted for *Gazette*, Oct. 1.) The follg. are transferred to the Reserve Class A:—Flight Lt. S. D. Scott (Nov. 8); Flying Officer S. A. Thorn (Nov. 4). Lt. J. S. Martin, R.M., Flying Officer, R.A.F., relinquishes his temp. commn. on return to duty with the Royal Marines (Oct. 25).

## Accountant Branch

Flight Lt. (now Squadron Leader) R. Byrne, M.C., is granted the acting rank of Sqdn.-Ldr., with pay, whilst employed as Command Accountant, Aden (May 27, 1928).

## Medical Branch

Flying Officer H. D. Humphreys (Temp. Lt. General List, Army) is promoted to rank of Flight Lt. (Dental) on promotion to rank of temp. Capt. in the Army (Jan. 27). (Substituted for *Gazette*, Oct. 29.)

## RESERVE OF AIR FORCE OFFICERS

### General Duties Branch

A. T. Laws is granted a commn. in the Special Reserve as a Pilot Officer on probation (Oct. 14). The following Pilot Officers of the Special Reserve are promoted to rank of Flying Officer:—N. A. Lindley (Aug. 3); G. A. Worth (Sept. 12). The following are transferred from Class A to Class C:—Flight Lt. T. A. Hale-Monro (Nov. 12); Flying Officer H. C. E. C. P. Dalrymple (Nov. 8); Flying Officer A. H. Grace (June 23). Flight Lt. F. C. Wilkinson is transferred from Class B to Class C (Nov. 11); Flying Officer K. E. Shelley relinquishes his commn. on completion of service (Sept. 11); Pilot Officer P. F. Canning relinquishes his commn. in Special Reserve on appointment to a short service commn. in R.A.F. (Oct. 21).

### Medical Branch

The follg. relinquish their commn. on completion of service:—Flight Lt. J. G. F. Heal, M.D. (Aug. 1, 1928). Flying Officer H. W. D. Mackenzie, M.B. (Sept. 9).

## AUXILIARY AIR FORCE

### General Duties Branch

No. 600 CITY OF LONDON (BOMBER) SQUADRON.—The follg. Pilot Officer to be Flying Officer:—R. Faulds (Oct. 5). No. 602 CITY OF GLASGOW (BOMBER) SQUADRON.—The follg. Pilot Officers to be Flying Officers:—J. K. Horsburgh (Sept. 14), A. D. McNab (Oct. 12). No. 603 CITY OF EDINBURGH (BOMBER) SQUADRON.—The follg. to be Pilot Officer:—T. M. McNeil (July 22). (Substituted for *Gazette*, Oct. 11.)

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the Royal Air Force are notified:—

### General Duties Branch

*Air Vice-Marshals*: F. R. Scarlett, C.B., D.S.O., to H.Q., R.A.F., Middle East, on appointment as Air Officer Commanding, 25.10.29. A. E. Borton, C.B., C.M.G., D.S.O., A.F.C., to H.Q., Inland Area, on appointment as Air Officer Commanding, 2.11.29.

*Group Captain* A. W. Bigsworth, C.M.G., D.S.O., A.F.C., to No. 10 Group, H.Q., Lee-on-Solent, to command, 1.11.29.

*Wing Commanders*: W. B. Hargrave, O.B.E., to Station H.Q., Andover, to command, 21.10.29. L. D. D. McKean, O.B.E., to Air Ministry (D.O.I.), for Air Staff duties, 18.11.29.

*Squadron Leaders*: H. S. Kerby, D.S.C., A.F.C., to Air Ministry (D.O.I.), 1.11.29. J. J. Breen, to No. 33 Sqdn., Eastchurch, 27.10.29. J. B. Cole-Hamilton, to No. 13 Sqdn., Netheravon, 1.11.29.

*Flight Lieutenants*: R. J. H. Holland, to No. 503 Sqdn., Lincoln, 1.11.29. W. J. Richards, to No. 22 Group H.Q., S. Farnborough, 4.11.29. R. A. B. Stone, to Home Aircraft Depot, Henlow, 28.10.29. J. S. L. Adams, to No. 19 Sqdn., Duxford, 21.10.29. M. C. W. C. Flint, M.C., to No. 30 Sqdn., Iraq, 1.10.29.

*Flying Officers*: W. E. Symonds, to R.A.F. Depot, Uxbridge, 3.9.29. A. G. C. Somerhough, to R.A.F. Base, Kai-Tak, 20.7.29. J. B. Mackenzie, to No. 33 Sqdn., Eastchurch, 11.10.29. F. S. Homersham, D.C.M., M.M., to R.A.F. Depot, Uxbridge, 29.9.29. J. A. P. Harrison, to No. 45 Sqdn., Middle East, 6.10.29. P. de C. Festing-Smith, to No. 216 Sqdn., Middle East, 6.10.29. H. D. Mitchelmore, to Home Communication Flight, Hendon, 19.9.29. A. J. Brister, to No. 111 Sqdn., Horchurch, 25.10.29. G. H. Huxham, to No. 10 Sqdn., Upper Heyford, 24.10.29. W. S. Calder, to No. 30 Sqdn., Iraq, 1.10.29.

*Pilot Officers*: F. C. Edney-Hayter, to No. 7 Sqdn., Worthy Down, 23.10.29.

## IN PARLIAMENT

### Indian Air Mail

MR. REMER, on November 14, asked the Postmaster-General if he has any information in his Department showing that the reason for the comparative failure to use the Indian air mail service is the absence of a British air mail stamp; and if he will take steps to see that such a stamp is provided?

MR. LEES-SMITH: During the seven months of operation the correspondence conveyed to and from this country by the Indian air mail has increased steadily from 800 to about 1,500 lb. a week. I do not consider this result unsatisfactory. The blue air mail labels issued free of charge are more suitable than special postage stamps for the purpose of distinguishing air mail letters.

### Air Ports

SIR R. GOWER asked what air ports there are in the United Kingdom; what arrangements are being made for the establishment of others; and whether he will favourably consider the suitability of the Medway towns for the purpose?

MR. MONTAGUE: If by "air ports" "Customs aerodromes," are meant, I would refer to the reply which was given on March 4 last, and add that Customs aerodromes at Manchester (Wythenshawe) and Bedford (Cardington), the latter for airships only, have since been approved, and that a site at Heston will probably be approved in the near future. Sites at Dalmuir and North and South Shields, for the Customs clearance of passenger traffic only are under consideration. If, however, in "air ports" the hon. Member includes aerodromes generally, there are at present 134 licensed civil aerodromes, and, in addition, 45 Royal Air Force aerodromes are available in "emergency." As regards the progress made in the establishment of municipal aerodromes I would refer to the replies given on November 7, and to the reply of March 4, referred to above; in regard to the provision of aerodromes, etc., by National Flying Services, Ltd., and also in regard to the suitability of the Medway towns for the purpose of aerodromes.

### Schneider Trophy

MR. MANDER: asked what was the total cost involved in British participation in the Schneider trophy contest?

MR. MONTAGUE: It is not possible to give a precise answer, since preparations for the Schneider trophy contest were inextricably mixed up with the official programme of development of high-speed aircraft and engines. As some indi-

cation of the magnitude of the cost, it is estimated that the Air Ministry would have spent at least £100,000 less in the last two years if there had been no question of the Schneider Trophy. The specific additional expenditure on accommodation, hospitality, and the like was in the neighbourhood of £4,000.

## PERSONALS

### Married

The marriage took place, on October 10, at St. Thomas's Roman Catholic Church, Cowes, Isle of Wight, of Flight-Lieut. THOMAS JOSEPH DESMOND, R.A.F., Manston, Kent, and Miss ELSIE FRASER, only daughter of the late Col. Fraser and Mrs. Fraser, of the White Cottage, East Cowes. The Rev. J. O. Hanlon officiated. Mr. D. F. W. Atcherley, R.A.F., was best man.

On October 30, at Elloughton Parish Church, Brough, East Yorkshire, JOHN B. STOCKBRIDGE (Flying Officer, R.A.F.O.), Flying Instructor of North Sea Aerial and General Transport Ltd., was married to Miss ALICE CROSSLEY. The marriage arranged between MAJOR V.W. EYRE, late R.A.F., and MME. D'AGAPEYEFF took place in London on November 5. Major and Mrs. Eyre are spending their honeymoon in South Africa.

The marriage took place on November 9, at St. Paul's, Knightsbridge, of Mr. HAROLD FREDERIC GEORGE SOUTHEY, R.A.F., son of the late Rev. William George Southey, Canon of Wakefield Cathedral, and Mrs. Southey, and Miss JOAN MARY GORDON DAVIES, daughter of Mr. and Mrs. Harold Blake Davies, of 32, Hill Street, S.W. Mr. A. R. Leslie-Melville, R.A.F., was best man.

### To be Married

The wedding arranged between MR. GORDON M. DUNCAN, D.F.C., younger son of the late Mr. John Duncan and Mrs. Duncan, and Miss AUGUSTA MILDRED DURRAN, elder daughter of the late Dr. John G. Durran and of Mrs. Durran, will take place on December 7, at Queen Street Church, Edinburgh.

The engagement is announced between HAROLD PERISONE HUDSON, R.A.F., only son of Arthur Glenton Hudson and Mrs. Hudson, of 66, Warwick Road, Earl's Court, S.W., and ARDA LOUISE, only daughter of Mrs. D. FORTUYN DROOGEEVER, of Clifton Lodge, Watford.

## CORRESPONDENCE

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

### SOME SCHNEIDER SUGGESTIONS

[2220] I note in your diary of forthcoming events that The R.Ae.S. are holding a discussion on High Speed Aircraft and I understand that this will include the rules of the Schneider Trophy Contest. Now Sir, this contest is a matter which is of international importance and it seems to me that the whole question of the rules should now be gone into very thoroughly. In view of the recent decision of both our own and the Italian Government not to support this contest it is obvious that subsequent contests will not be of the same character as hitherto. What seems to me the real question is not whether the rules should be altered, but what interpretation should be put upon them. Are the main objects of the contest to be regarded in the light of research work in which it is desired to develop the fastest machine, and if so, is this machine to be seaworthy or not, and further, are these objects to be attained without regard to public interest? Or is the object for which it was founded, to provide a spectacular race which will thrill the public, foster a spirited interest in the development of aviation and at the same time improve the breed?

It is apparent now that with the existing form of high speed seaplane both the public and the research people cannot be equally served and any compromise must of necessity mean that one or other does not get the maximum benefit from the contest, therefore I maintain that it is high time the actual significance of the rules should be established.

Being an outside observer, I naturally lean more toward the public interest point of view and I should like to see the race developed, as a race. This would mean that private interests would have a chance by entering one machine, and if the rules were amended to obviate having navigability trials on a separate day there seems no reason why it should not become one of the public outings of the year. Surely some reasonable form of starting could be devised, such as is used in the T.T. races which would cut the risk to the minimum and at the same time provide thrills and even such a race would provide a reasonable amount of data for the scientists to work on just as it does in motor-car racing or any other racing.

Finally, if it is decided that the research side is the most important then let us stop trying to make the public think they are going to be thrilled by the contest. From what I saw of the last contest, I venture to think that never again will there be even so many general spectators as there were this year—75 per cent. went because they did not know what they were going to see, but thought that it was going to be thrilling—so it was to those who realised the full significance of the speeds, but to those who knew little about it ???

J. C.

London, W.1.  
Nov. 15, 1929.

### AIRPORT CONFERENCE

[2221] You invite correspondence on the statement in your last number by the Borough Engineer of Blackpool that in the past four months only one outside aircraft had landed on its aerodrome, enriching the corporation by the sum of a single shilling. And since I landed there on September 11, on my way back here from my home in Cumberland, I suppose that mine must be the aeroplane referred to. Now I chance to retain my receipt for the sovereign I spent at the aerodrome on petrol and on the usual landing fee of half-a-crown. Moreover, my pilot and I only did not lunch at the aerodrome, because we could obtain neither food nor drink there. Even so, however, it was solely because there was an airport at Blackpool that we stopped and got lunch in the town at all.

All this, of course, in no way affects the force of Mr. Wood's argument as to the present fewness of visiting aircraft. But it may at least suggest that when they do come they will probably leave more than a shilling behind them.

F. A. SIMPSON.

Trinity College, Cambridge.  
November 18, 1929.

### "Make It With Tubes"

AN interesting booklet under the above title has been issued by Accles & Pollock, Ltd., of Oldbury, Birmingham.

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### "Advertising Man"

WE have received from The United Steel Companies, Limited, a letter pointing out that their Daniel Doncaster & Sons, Ltd. branch have received, over the pseudonym "Advertising Man," a criticism of their advertisement in FLIGHT of November 15, 1929, and requesting us to publish in FLIGHT an appeal to the anonymous writer to make himself known to them as they would like to discuss his suggestions. Will "Advertising Man" communicate with The United Steel Companies, Ltd., at 17, Westbourne Road, Sheffield.

### PUBLICATIONS RECEIVED

*A Register of Civilian Aircraft.* Compiled by R. L. Preston. Household Brigade Flying Club, Heston Air Park, Hounslow, Middlesex. Price 2s. 6d.; 2s. 9d. post free.

*Bulletin No. 8, 1928. Section No. 9.* University of Toronto, Faculty of Applied Science and Engineering School of Engineering Research. The University of Toronto Press, Toronto, Oct., Canada.

*Annual Report of the Director of the Meteorological Office, for the Year ended March 31, 1929.* H.M. Stationery Office, Kingsway, London, W.C.2. Price 1s. 6d. net.

*Revue des Forces Aeriennes.* September 1929. No. 2. Gauthier-Villars & Cie., 55, Quai des Grands-Augustins, Paris. Price 20 Fr.

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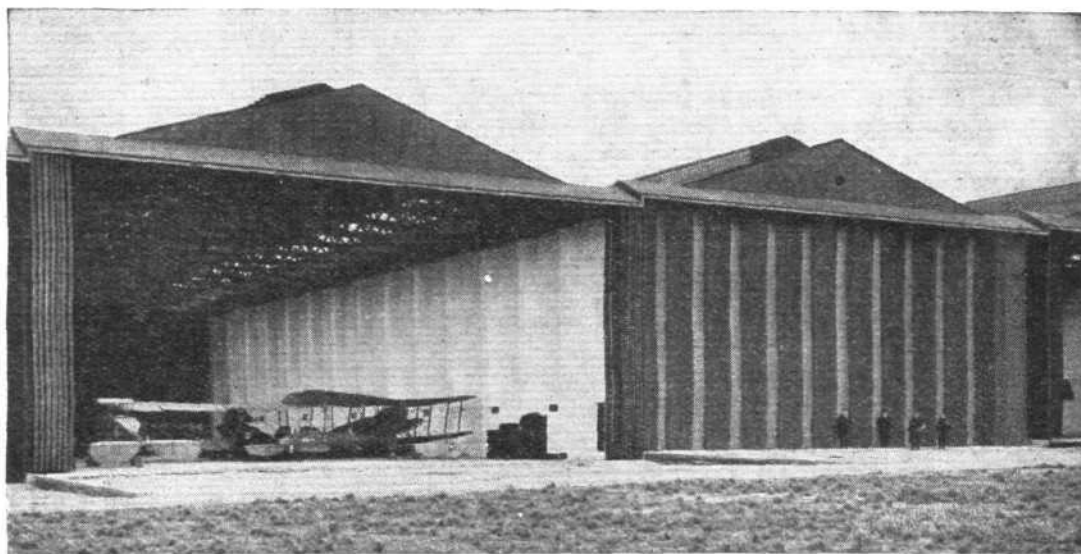
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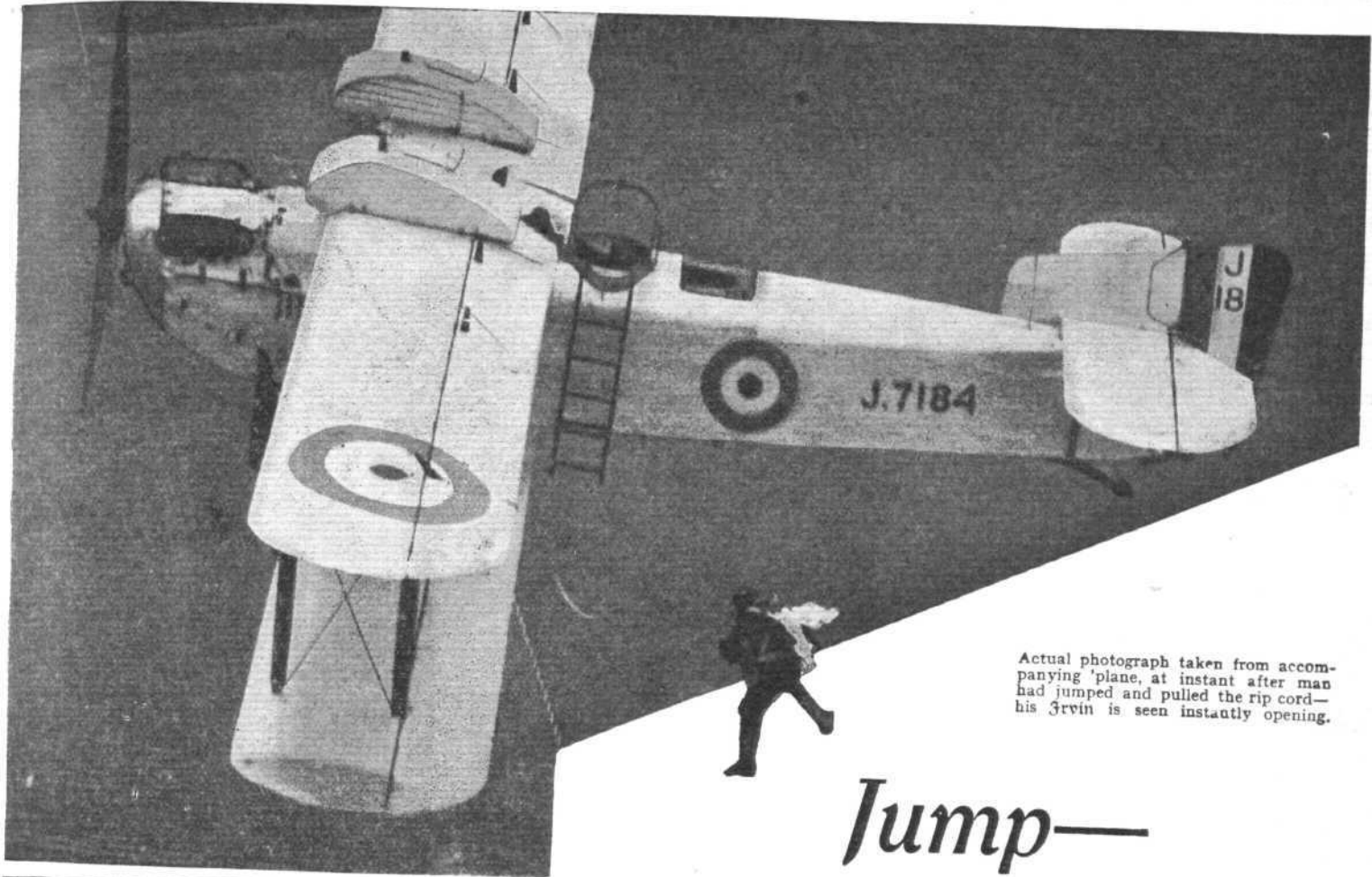
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